JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S6800EA

Hi-Fi

S VHS
625

SPECIFICATIONS

GENERAL

Power requirement : AC 220 – 240 V∿ , 50/60 Hz
Power consumption : 39 W
Temperature : 5°C to 40° (Operating)
: –20°C to 60°C (Storage)
Operating position : Horizontal only
Dimensions (WxHxD) : 435 x 108 x 390 mm
Weight : 7.1 kg
Format : S-VHS/VHS PAL standard
Tape width : 12.65 mm
Tape speed (SP) : 23.39 mm/sec
Tape speed (LP) : 11.70 mm/sec
Maximum recording time
(SP) : 240 min. with E-240 video cassette
(LP) : 480 min. with E-240 video cassette

VIDEO

Signal system : PAL colour and CCIR monochrome signals, 625 lines/50 fields
Recording system : Rotary two-head helical scan system with slant double-azimuth combination video heads
Input : 0.5 to 2.0 Vp-p, 75 ohms, unbalanced
Output : 1.0 Vp-p, 75 ohms, unbalanced
Signal-to-noise ratio : 43 dB (Rohde & Schwarz noise meter)
Horizontal resolution : 250 lines (VHS), 400 lines (S-VHS)

AUDIO

Input : Mic:–67 dBs, high impedance, unbalanced
: AUDIO IN connector (RCA x 2):–8 dBs, 50 k-ohms, unbalanced
: AUDIO/VIDEO socket (21-pin Peri connector):–3.8 dBs, (CENELEC standard), 10 k-ohms, unbalanced
Output : AUDIO OUT connector (RCA x 2):–6 dBs, high-impedance load less than 1 k-ohm, unbalanced (100 k-ohms, load)
: AUDIO/VIDEO socket (21-pin Peri connector):–3.8 dBs, (CENELEC standard), high-impedance load less than 1 k-ohm, unbalanced

NORMAL AUDIO

Recording system : Longitudinal track
No. of audio channels : 1 (monaural)
Frequency range : 70 Hz to 10,000 Hz

Hi-Fi AUDIO

Recording system : Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels : 2 Hi-Fi audio channels
Frequency response : 20 Hz to 20,000 Hz
Dynamic range : More than 90 dB
Wow and flutter : Less than 0.005% WRMS

TUNER

Tuning system : Frequency synthesized tuner
TV channel storage capacity : 48 positions (+ AUX position "AU")
Channel coverage : VHF band I : CH 0 – 5
VHF band III : CH 5A – 11
UHF band IV/V : CH 28 – 69
Aerial output : VHF channel 0 or 1 of Australian channel system (switchable, preset to channel 1 when shipped.)

TIMER

Clock reference : Quartz-crystal
Programme capacity : 1-year/8-programme time
Memory backup time : Minimum 3 min.

ACCESSORIES

Provided accessories : Aerial cable
Infrared remote control unit
"R6" battery x 2
Audio/Video cable
Optional accessories : VPT adapter VU-V140E
RGB signal converter KM-V7EG

Specifications shown are for SP mode unless otherwise specified.
Design and specifications subject to change without notice.

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No. 82334
October 1992

NOTE: For a technical description, please refer to Technical Guide VTG82077 HR-S6800 PAL.

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▒) parts are critical for safety.
   Replace only with specified part numbers.
   Note: **Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.**

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

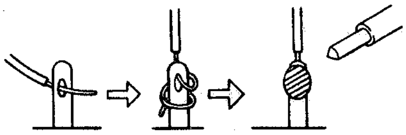

Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

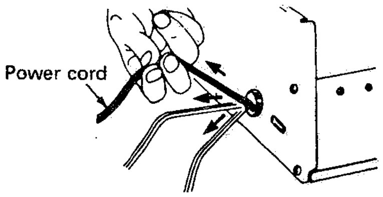

Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

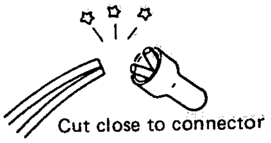

Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

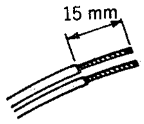

Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

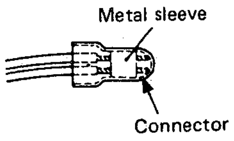

Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

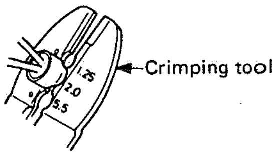

Fig. 6

(5) Check the four points noted in Fig. 7.

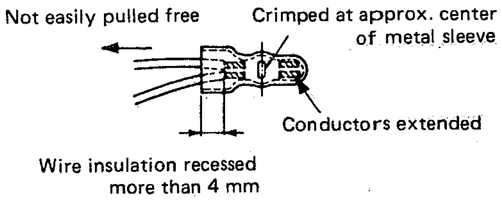
Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. *Clearance distance*

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

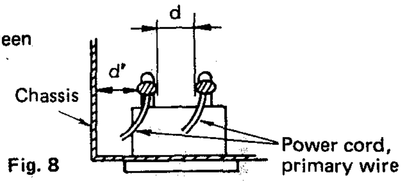

Fig. 8

4. *Leakage current test*

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

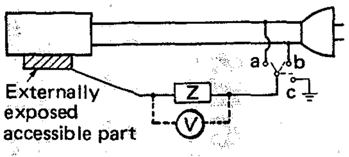

Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

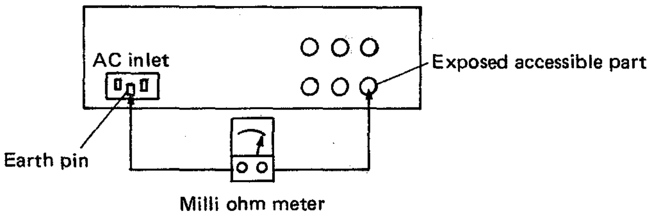

Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 µF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS

Safety Precautions

The rating plate and the safety caution are on the rear of the unit.

WARNING — DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT

Connection to the mains supply plug in the United Kingdom.

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with the following code:

Blue to N (Neutral) or Black
Brown to L (Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a competent electrician.

CAUTION

- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

This unit is produced to comply with Directives 76/889/EEC, 82/499/EEC, 87/308/EEC and Standard IEC Publ. 65.

IMPORTANT:
Please read the "Precautions" section of this instruction manual before installing or operating the recorder.

BEMAERK: I stilling OFF er apparatet stadig forbundet med lysnettet Hvis det ønskes fuldstændig afbrudt skai netledningen trækkes ud.

Omkopplaren OPERATE på denna apparat är sekundärt kopplad och skiljer inte apparaten från nätet i läge OPERATE OFF.

IMPORTANT: It may be unlawful to record or play back copyrighted material without the consent of the copyright owner.

Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.

Cassettes marked "S-VHS" and "VHS" can be used with this video cassette recorder. However, S-VHS recordings are possible only with cassettes marked "S-VHS".

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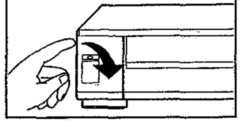
How To Use This Instruction Manual

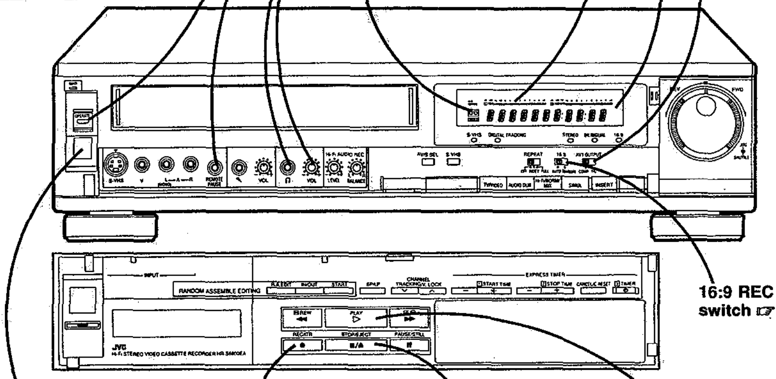
This instruction manual has been designed with both new and experienced users in mind. The first half offers detailed, step-by-step instructions for setting up your video recorder, and on using its basic functions. The second half provides instructions on the many other functions available on your video recorder. So just by following the instructions on the "Getting Started" and "Basic Operation" sections of this manual, you can master all of your recorder's basic functions, including timer-recording. Once you're sufficiently familiar with basic operation, or if you're already an experienced video user, you can move on to the more advanced functions introduced on the following pages. Related features have all been clustered together for easy reference, and their categories (playback, recording, timer, etc.) are easily recognisable by the symbol appearing in the page header.
If you ever need to refer to another page for instructions or information, you will be told so by a ☞ mark pointing to the page number.
Remember, you must use your video recorder correctly to fully enjoy it. Please use this manual effectively. It's the surest and quickest way to unlock the full potential of your new JVC video recorder.

Controls, Indicators, And Connectors

Front Panel

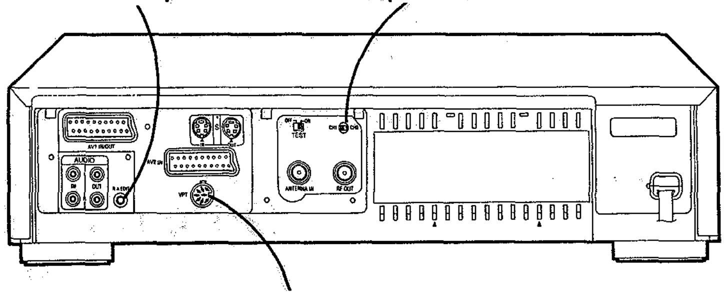


To open the front panel cover, pull forward with finger.


OPERATE button with LED indicator
REMOTE PAUSE terminal ☞p.41
Headphone jack and Volume control
"Cassette loaded" indicator
Audio level meter
Message display panel ☞p.16, 45
AV 1 OUTPUT select switch ☞p.8
16:9 REC select switch ☞p.10
Infrared beam sensor window
REC/ITR button ☞p.26
STOP/EJECT button
PLAY button

- Point the remote control at this.

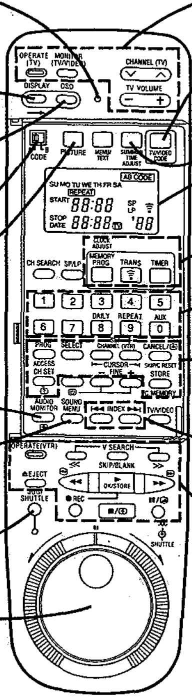
Back Panel


R.A. EDIT terminal ☞p.38
RF output channel select switch
VPT connector ☞ p.44

Wireless Remote Control

Open the remote's cover to access the buttons under the cover.

Initialises the LCD memory: Insert a pointed object into this hole and push the switch located inside. Normally, there is no need to touch this switch.


☞p.26
OSD (On-Screen Display) ☞p.16, 17, 26
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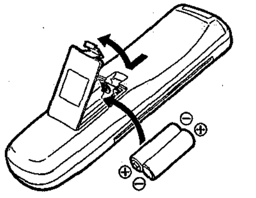
LCD (Liquid Crystal Display)
LCD Timer, Clock Adjust
Multi-Purpose Numeric Keys
Timer, Tuner and Counter
☞p.25
Basic Functions

Installing Batteries

1. Open the battery compartment cover.
2. Insert 2 "R6"-size batteries (provided) in the correct directions.
3. Replace the cover.



NOTE:
Some buttons have additional labels (mostly pictograms) for teletext operations. You will find instructions for these in the Instruction Manual of the teletext adapter.

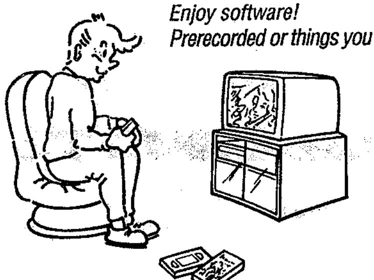
How To Use
The remote control can operate most of your video recorder's functions, as well as basic functions of TV sets of JVC and other brands. ☞p.43

- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

Getting To Know Your Video Recorder

The 3 Basic Ways Of Using Your Video Recorder

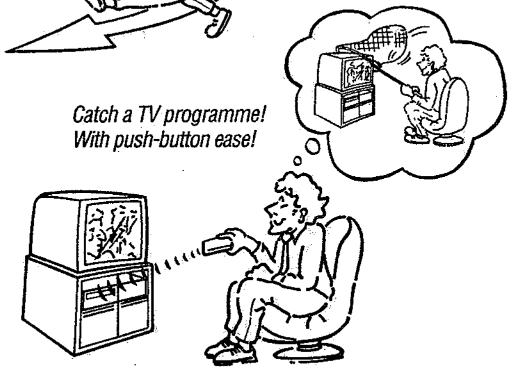
Enjoy software!
Prerecorded or things you've recorded!



Playback

With this recorder properly connected to your TV set, you'll be able to watch an enormous variety of video software. Enjoy the VHS tapes you already have, and treat yourself to the terrific picture quality of Super VHS tapes. And, thanks to this recorder's Hi-Fi capability, you'll also be able to fully enjoy the powerful Hi-Fi soundtracks available on most prerecorded VHS software.

Catch a TV programme!
With push-button ease!



Record TV programmes while you're away.
Watch TV programmes when you want.

Recording

This recorder offers you a choice of recording in either VHS or S-VHS. Thanks to S-VHS's high resolution, you'll be able to record TV programmes without any loss of the original picture quality. S-VHS is economical too, because you can record in the longer LP mode and still get excellent picture quality. And any time you need to record in VHS — no problem. Just insert a VHS cassette and you're ready to go.

THE LATE SHOW

Timer-Recording

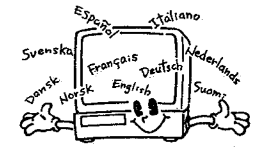
By using the built-in timer, you can set your video recorder to record TV programmes for you while you're asleep, while you're away, or while you're doing something else. Then you can watch those programmes later, whenever it's convenient, whenever you want. This is what's called "timeshifting", and now you can do it the JVC way.

Some Other Functions On Your Video Recorder

GOOD MORNING
Good Morning

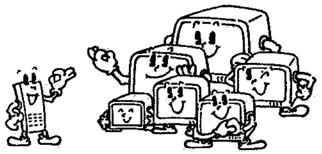
"Message" Display Panel

The video recorder "talks" to you from its message display panel. It's easy to understand what the recorder is doing at any time — a friendlier way to interact with your video deck.



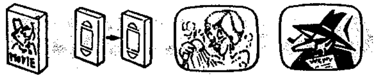
Multi-Language On-Screen Display

Ten languages to choose from. So you can check the engaged mode, program the timer, and more, while watching on-screen messages in your own language.



Multi-Brand-TV-Compatible Remote Control

Compatible with most major brands of televisions for basic control functions. Put an end to two-handed remote control.

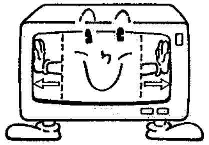


Picture Control

One-touch control over the type of video picture you want. Make it clearer, make it better for dubbing, make it softer, make it sharper — do it all with Picture Control.

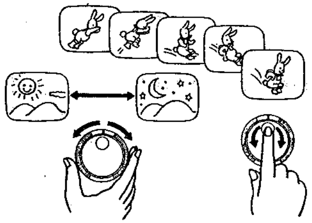
Express Timer

Makes timer programming as easy as pressing three buttons on the recorder. Start time, stop time, engage — that's all!



Auto 16:9

Recording/playback of wide aspect ratio programmes with automatic detection. Puts you in touch with the latest in broadcast entertainment.



Jog/Shuttle Controls

Fast, accurate visual search from slow motion to fast motion, or frame-by-frame search, in either direction. Useful in editing or playback.

Sound Menu

Brings out the best in video sound with the most effective acoustic compensation for every type of software — whether it's stereo or mono, film or music.

Making The Right Connections

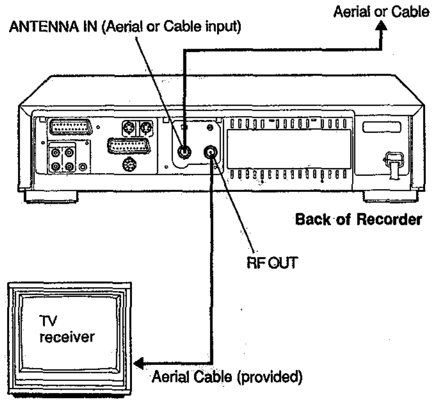
It's essential that your video recorder be properly connected. Follow these steps carefully. THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.

A RECORDER-TO-TV CONNECTION

RF CONNECTION

For TV sets without AV input terminals:

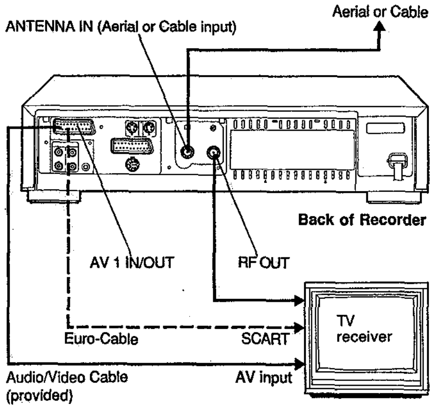
1. Connect the TV aerial cable to the recorder.
2. Connect the recorder to the TV's aerial terminal.


ANTENNA IN (Aerial or Cable input)
Aerial or Cable
Back of Recorder
RF OUT
TV receiver
Aerial Cable (provided)

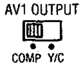
AV CONNECTION

For TV sets with AV input terminals:

1. Connect the aerial, recorder and TV as per "RF CONNECTION".
2. Connect the recorder to the TV's AV input terminals or 21-pin SCART connector.


ANTENNA IN (Aerial or Cable input)
Aerial or Cable
Back of Recorder
AV 1 IN/OUT
RF OUT
Euro-Cable
SCART
TV receiver
Audio/Video Cable (provided)
AV input

The AV1 IN/OUT connector accepts only a composite signal (regular video signal), but can deliver either a composite video signal or a Y/C signal (a signal in which the luminance and chrominance signals are separated) according to the setting of the front panel AV1 OUTPUT switch.


AV1 OUTPUT
COMP Y/C

- If your TV's SCART connector is compatible only with the regular video signal, set this switch to COMP.
- If your TV's SCART connector is compatible with the Y/C signal, set this switch to Y/C. You will better enjoy high-quality S-VHS pictures.
- If your TV's SCART connector is RGB-compatible, connect the KM-V7EG RGB Signal Converter (optional) between the AV1 IN/OUT connector and the TV's SCART connector, and set this switch to Y/C. The Y/C signal will be converted into an RGB signal for reproduction of high-quality S-VHS pictures.

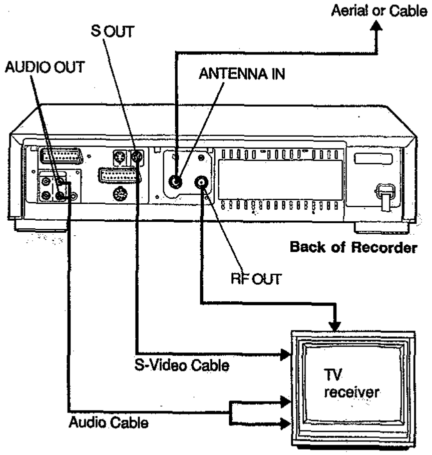
NOTE:

- If you have connected the TV to your recorder using the provided Audio/Video cable, set this switch to COMP.

S-VIDEO CONNECTION

For TV sets with an S-VIDEO input terminal:

1. Connect the aerial, recorder and TV as per "RF CONNECTION".
2. Connect the recorder's S OUT terminal to the TV's S-VIDEO IN terminal.
3. Connect the recorder's AUDIO OUT terminals to the TV's AUDIO IN terminals.


Aerial or Cable
S OUT
AUDIO OUT
ANTENNA IN
Back of Recorder
RF OUT
S-Video Cable
Audio Cable
TV receiver

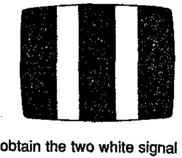
NOTES:

- To make the most of Super VHS picture performance, we recommend you use the S-VIDEO connection.
- To operate the recorder with your TV using the S-VIDEO connection, set your TV to the VIDEO (or AV mode).
- If your television is not stereo-capable, use the recorder's AUDIO OUT connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction.

B SELECT VIDEO CHANNEL (0 or 1)

With an RF connection, the video recorder sends picture and sound signals through the connecting cable to your TV on VHF channel 0 or 1.

TEST SIGNAL



1. Turn on the recorder.
2. Set the TEST switch to ON.
3. Press the TV/VIDEO button to engage the VIDEO mode.
4. Set your TV receiver to channel 1 or 0 (depending on which the RF output channel select switch is set to.) Adjust the fine tuning to obtain the two white signal bars on the screen as illustrated. This is your VIDEO CHANNEL.
5. Reset the TEST switch to OFF

IMPORTANT:

With RF Connection

- It is always necessary to set your TV's channel to VHF channel 0 or 1 to operate the recorder with your TV.
- The TV/VIDEO button switches the recorder's mode between TV and VIDEO. When the power is turned on, the TV mode is selected. To use the recorder's functions, select the VIDEO mode.

With AV Connection

- Set your TV to the VIDEO (or AV), Y/C, or RGB mode according to the type of your TV's connector.
- For switching the TV's mode, refer to the instruction manual of your television.

With S-VIDEO Connection

- Set your TV to the VIDEO (or AV) mode. The S-VIDEO connection has priority over AV connection.

Making The Right Connections (cont'd)

Wide-Screen Viewing And Recording

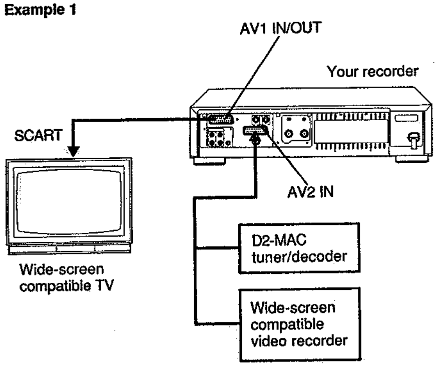
If your television is compatible with the 16:9 wide-screen format, please read this page to take full advantage of this recorder's Auto 16:9 function.

Available Sources Of Wide-Screen Programmes

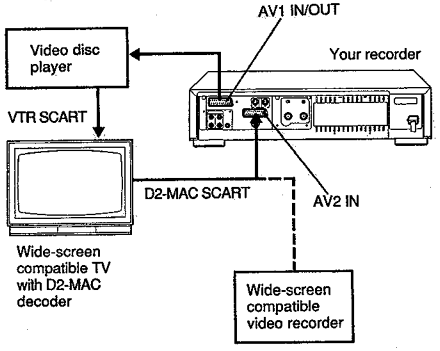
Available sources include D2-MAC broadcasts, teletext broadcasts, video discs and video tapes.

How To Connect The Sources

Example 1


AV1 IN/OUT
Your recorder
SCART
AV2 IN
Wide-screen compatible TV
D2-MAC tuner/decoder
Wide-screen compatible video recorder

Example 2


AV1 IN/OUT
Video disc player
Your recorder
VTR SCART
D2-MAC SCART
AV2 IN
Wide-screen compatible TV with D2-MAC decoder
Wide-screen compatible video recorder

What Your Video Recorder Does

16·9
AUTO MANUAL

Set this switch to AUTO. Then your recorder will automatically record wide-screen programmes as "wide" and normal programmes as "normal".

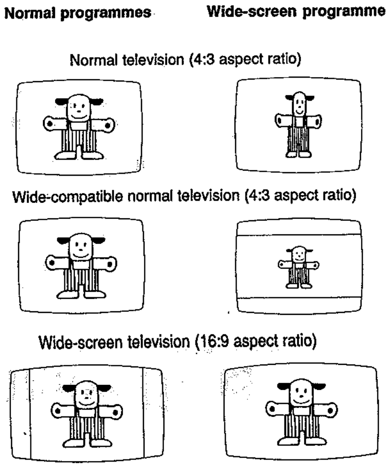
Whichever position of this switch is selected, your recorder will automatically:

- play back wide-screen programmes as "wide" and normal programmes as "normal".
- control the television (if equipped with Auto Aspect Ratio Switching function) so that both types of programmes are displayed with the right proportions.

NOTES:

- When using the Auto 16:9 function, press TV/VIDEO to make the VIDEO indicator disappear from the display panel.
- For the recorder to control the television, it must be connected to the TV via the AV1 IN/OUT connector.
- For the recorder to record in the correct mode automatically, the signal must be applied to either the AV1 IN/OUT or AV2 IN connector.
- When recording wide-screen programmes via the S INPUT (S IN) or V INPUT connector, for example in tape-to-tape dubbing, set the 16:9 REC switch to MANUAL.
- When playing back wide-screen programmes via the S OUT connector, switch the television to the 16:9 mode manually.

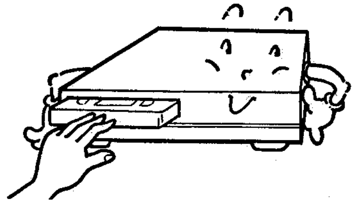
What You See On The Screen


Normal programmes
Wide-screen programmes
Normal television (4:3 aspect ratio)
Wide-compatible normal television (4:3 aspect ratio)
Wide-screen television (16:9 aspect ratio)

Handling Video Cassettes

A LOADING A CASSETTE

1. Pull the front panel cover open.
2. Insert a cassette with its label side facing you.
    - If the cassette is not loaded firmly it will be ejected.



B UNLOADING A CASSETTE

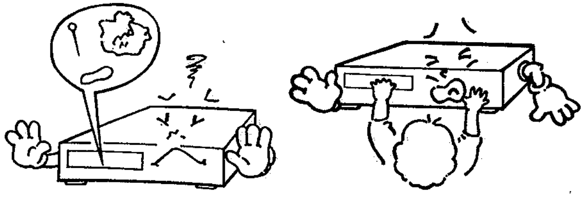
1. Press EJECT.
    - If the cassette will not eject, check to see if "TIMER" is displayed on the message display panel. If it is, press the TIMER button to turn it off.

NOTES:

- Be sure to insert the cassette firmly into the slot; otherwise it will be automatically ejected.
- The automatic loading mechanism will operate only when the cassette is inserted correctly.
- When ejecting the cassette using the remote control's EJECT button with the front panel cover closed, make sure that there are no obstructions preventing the front panel cover from opening.

WARNING

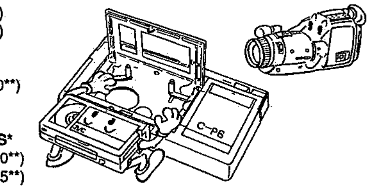
- Do not insert fingers or foreign objects into the cassette loading slot since this could lead to injury or damage to the mechanism. Be especially careful with children.
- Do not try to pull out a cassette once automatic loading has started.



Usable Cassettes

Full-Size VHS
E-30 (SE-30**)
E-60 (SE-60**)
E-90
E-120
E-180 (SE-180**)
E-240

Compact VHS*
EC-30 (SE-C30**)
EC-45 (SE-C45**)

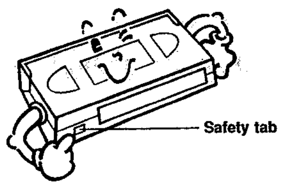


* Compact VHS camcorder recordings (PAL) can be played on this video recorder. Simply place the recorder cassette into a C-P6 Cassette Adapter and it can be used just like any full-sized VHS cassette.

** This video recorder can record on regular VHS and Super VHS cassettes. While only VHS signals can be recorded on regular VHS cassettes, both VHS and Super VHS signals can be recorded and played back using Super VHS cassettes.

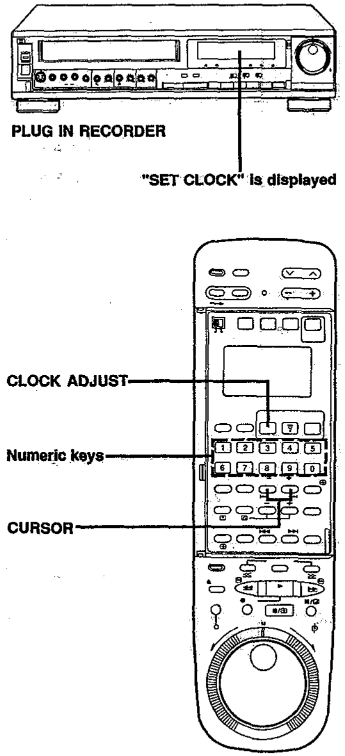
Accidental Erasure Prevention

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.



Setting The Clock

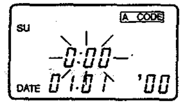
Since your video recorder bases all of its timer recording start and stop "decisions" on the time kept by its built-in clock, accurate setting of this clock is crucial for proper timer-recording results. Follow these instructions to set the remote control's LCD clock and transfer its contents to the recorder's clock.


PLUG IN RECORDER
"SET CLOCK" is displayed
CLOCK ADJUST
Numeric keys
CURSOR

A LOAD BATTERIES (☞p.5)

1 Check the LCD.

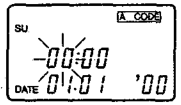
- The time display section (0:00) will be blinking.


SU
A CODE
0:00
DATE 01.01 '00

B START CLOCK SETTING

2 Press CLOCK ADJUST.

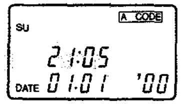
- Blinking digits will prompt you to items that can be set.


SU
A CODE
00:00
DATE 01.01 '00

C INPUT THE TIME

3 Press the appropriate numeric keys.

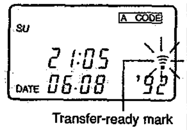
- Example: For 21:05, press 2 1 0 5. Always enter "0" before single-digit entries.


SU
A CODE
21:05
DATE 01.01 '00

D INPUT THE DAY/MONTH/YEAR

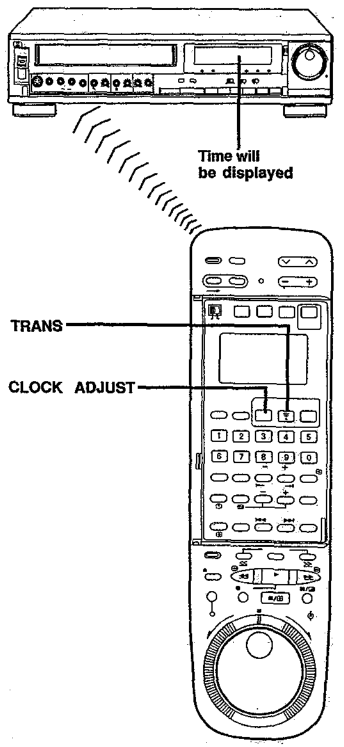
4 Press the appropriate numeric keys.

- Example: For 6th August, 1992, press 0 6 0 8 9 2. Always enter "0" before single-digit entries.
- After setting the year, the transfer-ready mark will appear and blink.


SU
A CODE
21:05
DATE 06.08 '92
Transfer-ready mark

TO MAKE CORRECTIONS

Press either CURSOR button so that the item you want to change blinks. Re-input that item. Continue to step E.


Time will be displayed
TRANS
CLOCK ADJUST

E TRANSFER AND START THE CLOCK

5 Press TRANS.

- The day of the week will automatically appear.
- The remote control's clock will start. At the same time, the set data will be transferred to the recorder.

AFTER A POWER OUTAGE

Since your video recorder has a 60-minute backup memory, it will not be affected by short power outages. If mains power is unavailable for over one hour, however, the recorder's display will revert to "SET CLOCK". In such a case, simply transfer the remote control's time to the recorder.

1 Press CLOCK ADJUST twice.
2 Press TRANS.

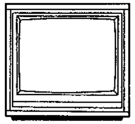
For quick "summer time" (Daylight Saving Time) adjustment, ☞p.36.

NOTES:

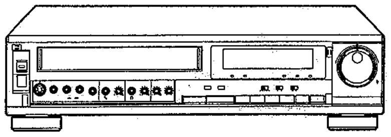
- If the day and month data is invalid (such as 31st April), the month digits are cleared automatically and the day digits will blink. Input again.
- If the year digits are automatically cleared in step D, it is possible that you have input 29th February for a non-leap year. Input again.
- When the batteries are exhausted, the time display will change to "0:00" and start blinking. Replace all the batteries and set the clock again.

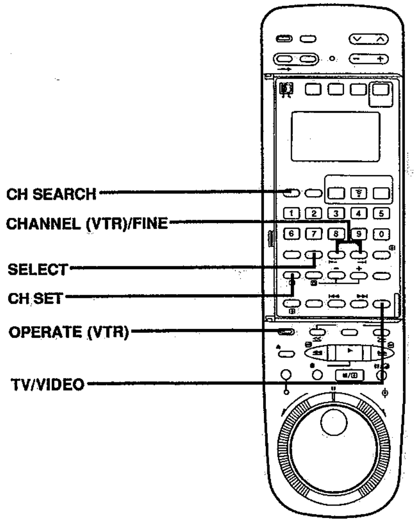
Setting The Tuner

The procedure introduced here lets you assign receivable channels in your area to channel positions on your video recorder's tuner. Once stored, these can be accessed with the CHANNEL (VTR) ∨/∧ buttons. During channel scanning, empty tuner channel positions will be skipped so you won't have to go through any "blank" channels to get to the one you want.



POWER ON;
SELECT VIDEO
CHANNEL (OR AV MODE)





A ENGAGE THE CHANNEL SET MODE

1 Press OPERATE(VTR) and then TV/VIDEO to engage the VIDEO mode.

PR 1

2 Press CH SET.

B SEARCH FOR RECEIVABLE CHANNELS

3 Press CH SEARCH.
- Automatic scanning will start at the lowest channel number, and stop when a broadcast is detected.

REAL Ch:28

⬇

SKIPPED

C FINE-TUNE THE CHANNEL

- Check the picture on the TV screen, and fine-tune it if necessary. When the picture is clear, proceed to Step D.

4 Press SELECT.
5 Press FINE (+ or –) so that the "–" sign appears at the centre.

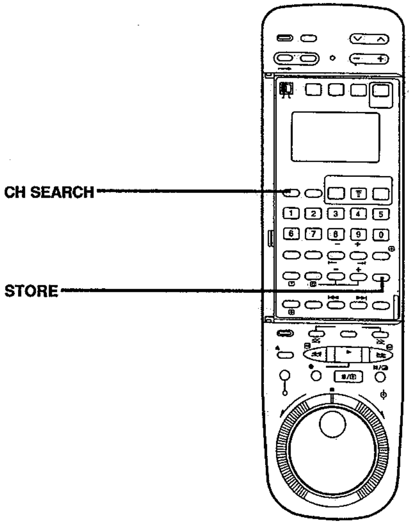
FINE - Ch:28

6 Press SELECT.

D SELECT A TUNER POSITION

7 Press CHANNEL (VTR) to select the tuner channel position where you wish to store that broadcast.

SKIPPED



E STORE THE CHANNEL

8 Press STORE.

STORED 1

⬇

REAL Ch28

- This message indicates that UHF channel 28 has been stored into the tuner's channel position 1.

F CONTINUE

9 Repeat steps B through E for other receivable channels.

TO CHANGE PRESET CHANNELS

- If you have already preset some channels, do not use the automatic Channel Search function to change or add channels. ☞ p.42.

NOTES:
- If you don't want to store the broadcast detected in Step B, simply press CH SEARCH to continue automatic scanning. Search will stop as soon as another broadcast is detected.
- Be sure to proceed to the next step within 60 seconds, otherwise Channel Search will be cancelled automatically. If this happens and you wish to continue channel setting, press CH SEARCH again. Channel scanning will resume, beginning with the next receivable channel.

TUNER Mode Displays — What They Mean

Message Display Panel

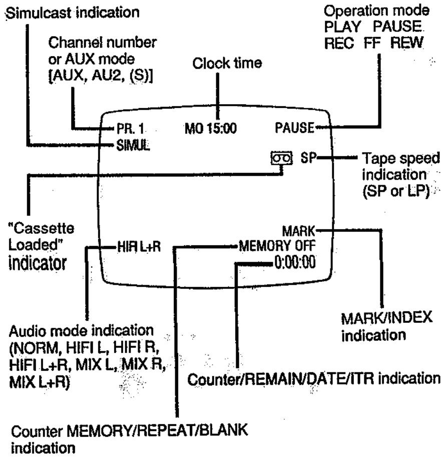
The operation mode is displayed on the recorder's display panel automatically. Displayed messages are designed to be self-explanatory. Here are some of the more common displays:

DISPLAY	MODE	DISPLAY	MODE
PLAY	Play	PAUSE (with channel number)	Record-Pause
STILL	Still	FWD SEARCH	Forward Search
FF	Fast-Forward	REV SEARCH	Reverse Search
REW	Rewind	FWD SLOW	Forward Slow
REC SP (with channel number)	Record	REV SLOW	Reverse Slow
TIMER REC	Timer-Recording	EJECT	Eject

For a more comprehensive list, ☞ p.45.

On-Screen Display

Operation modes (except PAUSE) are displayed on the TV screen only when the On-Screen Display function is set to ON. ☞p.17.



Simulcast indication
Channel number or AUX mode [AUX, AU2, (S)]
Clock time
Operation mode PLAY PAUSE REC FF REW
PR. 1
SIMUL
MO 15:00
PAUSE
SP
Tape speed indication (SP or LP)
"Cassette Loaded" indicator
HIFI L+R
MARK
MEMORY OFF
0:00:00
MARK/INDEX indication
Audio mode indication (NORM, HIFI L, HIFI R, HIFI L+R, MIX L, MIX R, MIX L+R)
Counter/REMAIN/DATE/ITR indication
Counter MEMORY/REPEAT/BLANK indication

AUTOMATIC INDICATION

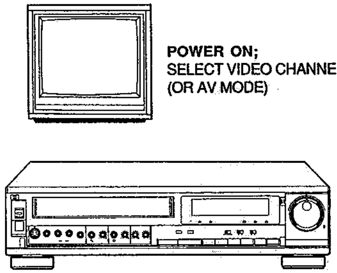
- **Channel, operation mode, audio mode, simulcast indication and "Cassette Loaded" mark**
  When the status is changed, the corresponding indication is displayed on the screen for 5 seconds. The PAUSE mode indication, however, is displayed for as long as the Pause mode is engaged.
- **Time and date**
  When time setting is completed, time and date are displayed for 5 seconds.

MANUAL RECALL

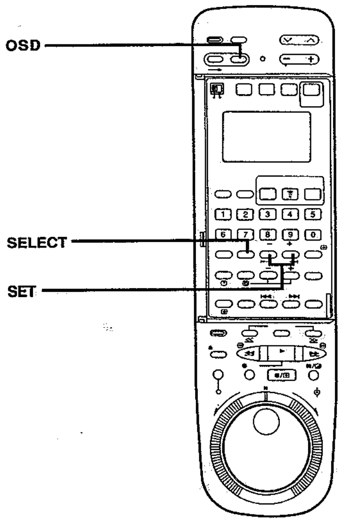
1 Press OSD (On-Screen Display).
- All indications corresponding to the current status is displayed for 5 seconds, leaving the counter information (counter, REMAIN or DATE) on the screen.
- To check only the counter information, press DISPLAY.

2 Press OSD to clear the counter display.

VCR On-Screen Set Up



POWER ON;
SELECT VIDEO CHANNEL
(OR AV MODE)



OSD
SELECT
SET

Language Select

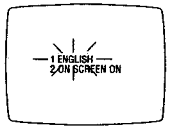
Although the preset on-screen language is English, you can set your video recorder to display on-screen messages in a choice of 10 languages.

A TURN ON THE RECORDER

1 Press OPERATE.

B ACCESS THE LANGUAGE SELECT MODE

2 Press OSD for longer than 2 seconds.
- The current language and On-Screen ON/OFF status are displayed on the screen.
- The displayed language blinks.



1 ENGLISH
2 ON SCREEN ON

C SELECT THE LANGUAGE

3 Press SET + or – until your desired language is displayed.
- Available languages are: ENGLISH, DEUTSCH, FRANCAIS, ITALIANO, ESPANOL, NEDERLANDS, SVENSKA, NORSK, SUOMI, and DANSK, in the order they are called up.

4 Press OSD while the language is blinking.
- Now all on-screen messages will be displayed in the selected language.

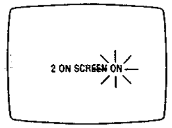
On-Screen Display Function ON/OFF

If you do not want on-screen displays, the function can be cancelled.

1 Press SELECT after step 2 above.
- The On-Screen ON/OFF status is displayed.

2 Press either SET button.

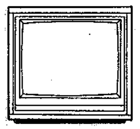
3 Press OSD while the status is blinking.
- Even with the function set to OFF, "PAUSE" is displayed for as long as the Pause mode is engaged. Of course, on-screen timer programming is not affected either.



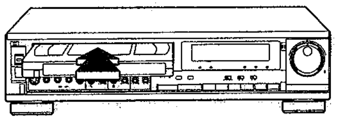
2 ON SCREEN ON

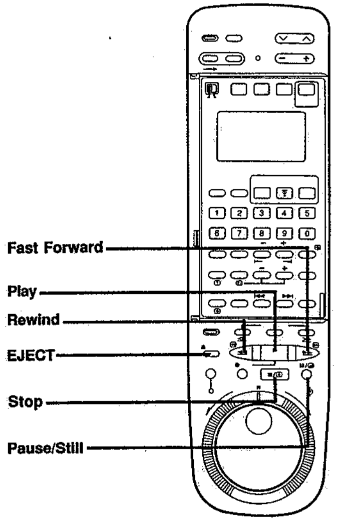
▶ Playback

The easiest, most basic operation possible with your video recorder is tape playback. Already-recorded signals on a video tape are read by your video recorder and displayed on your TV just like a TV programme.



POWER ON;
SELECT VIDEO CHANNEL
(OR AV MODE)





A LOAD A CASSETTE

1 Insert a cassette.
- The recorder power will come on automatically.
- If the safety tab on the cassette is removed, playback will start automatically.

B TO START PLAYBACK

2 Press ▶ (Play).

C TO STOP PLAYBACK

3 Press ■ (Stop).

D TO REWIND OR FAST-FORWARD

4 Press ◀◀ (Rewind) to rewind the tape.
5 Press ▶▶ (Fast Forward) to fast-forward the tape.
- Press ■ (Stop) to stop rewind or fast-forward.

E TO EJECT THE TAPE

6 Press EJECT.

High-Speed Forward And Reverse Search

During Playback:

1 Press ▶▶ (Fast Forward) for high-speed forward search.
2 Press ◀◀ (Rewind) for high-speed reverse search.
3 Press ▶ (Play) to resume normal playback.
- For short searches, keep ▶▶ (Fast Forward) or ◀◀ (Rewind) pressed for more than 2 seconds. When released, normal playback will continue.

Still Playback And Frame Advance

During Playback:

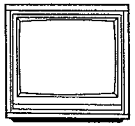
1 Press II (Pause/Still) to view a still picture.
2 Press again to advance the picture frame by frame.
3 Press ▶ (Play) to resume normal playback.

NOTES:

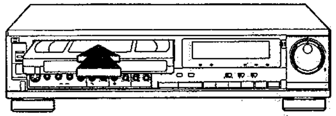
- Tapes with monaural soundtracks (normal audio) are automatically played back in the NORM mode. When playing back tapes with Hi-Fi stereo, bilingual, or audio-dubbed soundtracks, ☞p.23.
- The recorder automatically stops when still continues for more than 5 minutes.
- If the still picture is unstable (vertical jitter) use the recorder's V. LOCK buttons to correct the picture.
- During search playback, some noise bars will appear.
- If noise bars appear during playback, correct using manual tracking. ☞p.22.
- There is no audio during search, still, or frame-by-frame playback.
- The recorder automatically rewinds when the end of the tape is reached.

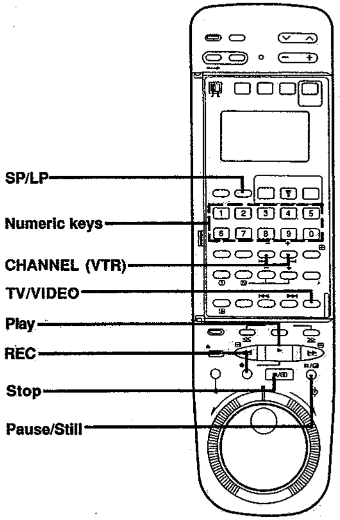
● Recording

TV signals being received by the recorder's built-in tuner can be recorded onto a video tape. This is realtime video recording.



POWER ON;
SELECT VIDEO CHANNEL
(OR AV MODE)





A LOAD A CASSETTE

1 Insert a cassette with the safety tab in place.
- The recorder power will come on automatically. Be sure that the VIDEO indicator is lit; if not, press TV/VIDEO so that it lights.

B CHOOSE A PROGRAMME

2 Press CHANNEL (VTR) or the numeric keys to select the channel you wish to record.

C SELECT THE TAPE SPEED

3 Press SP/LP.

D TO START RECORDING

4 Press ● REC (Record) and ▶ (Play) simultaneously.

E TO PAUSE RECORDING

5 Press II (Pause/Still).
6 Press ▶ (Play) to resume recording.

F TO STOP RECORDING

7 Press ■ (Stop).

To Watch Another Programme While Recording

During Record:

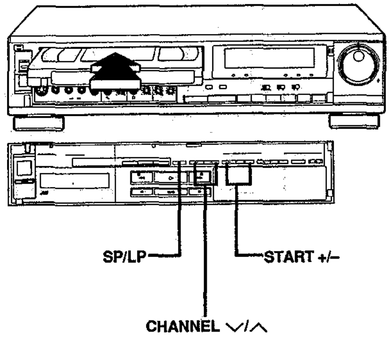
1 Press TV/VIDEO. The recorder's VIDEO indicator and the TV broadcast being recorded will disappear.
2 Use the channel controls on the TV to select the other channel you wish to view.
- The programme selected with the TV channel controls will appear on the TV screen while the one selected with the video recorder's channel controls will be recorded on the tape.

NOTES:

- To start recording with the recorder's REC/ITR button, press it once on its own. Pressing REC/ITR more than once activates the Off-Timer. ☞p.26.
- After pause, when recording is resumed, a few frames recorded before the pause may be overlapped by the new recording. This is meant to reduce picture distortion and is not a malfunction.
- The recorder automatically stops when record-pause continues for more than 5 minutes.
- If the Record button does not work, check to see if the cassette's safety tab has been removed.
- The channel cannot be changed while recording is in progress. To change the channel, engage the record-pause mode, then change the channel.
- The recorder automatically rewinds when the end of the tape is reached during recording.
- For stereo or bilingual recording, ☞p.27.

Timer-Recording

The "Express Timer" introduced here is the quickest method of programming your video recorder's timer. TV shows to be broadcast within 24 hours can be programmed for automatic recording simply by pressing three buttons (conveniently numbered) on your recorder's control panel. For timer programming using your remote control, ☞ p.30. TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.



Express Timer Programming

A LOAD A CASSETTE

1 Insert a cassette with the safety tab in place.
- The recorder power will come on automatically.
- The recorder's display panel will show the channel being received.

PR. 12

2 If you want to record another channel, press CHANNEL ∨/∧ to change the channel.

3 If you want to change the tape speed, press SP/LP.

B SET THE START TIME

4 Press START +.
- This engages the programme set mode, and the current time will appear.

12:33 _ ↲

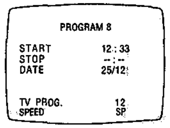
5 Press START +/– to set the start time.
- START + advances the time and START – reverses the time.
- Press briefly to change by 1 minute. Hold the button down to change by 30-minute increments.

16:00 _ ↲

- After the start time is set, "TODAY" or "TOMORROW" will be displayed for 3 seconds.

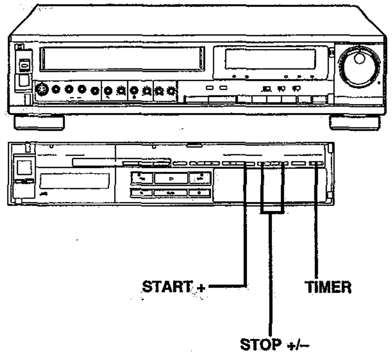
TO WATCH THE ON-SCREEN DISPLAY

At step B, if the TV is on and is set to the video channel (or AV mode), the data you input will also be shown on the TV screen.


PROGRAM 8

START 12:33
STOP --:--
DATE 25/12

TV PROG. 12
SPEED SP



C SET THE STOP TIME

6 Press STOP +.
- The start time will be transferred over to the stop time position automatically.

16:00 _ ↲ 16:00

7 Press STOP +/– to set the stop time.
- STOP + advances the time and STOP – reverses the time.
- Press briefly to change by 1 minute. Hold the button down to change by 30-minute increments.

16:00 _ ↲ 17:45

D SET TO TIMER MODE

8 Press TIMER.
- The recorder will enter the timer mode and power will go off.

TIMER 12:35

TO CHANGE CHANNELS

If needed, you can change the channel at any time during steps B and C. This changes the channel being received and the channel to be recorded.

PR.26

TO CHANGE THE TAPE SPEED

If needed, you can change the tape speed at any time during steps B and C.

ATTENTION:

- If you have programmed the timer's PROGRAM 8 (via the on-screen programming facility that is available when an optional VPT adapter is connected, ☞ p. 44), using the Express Timer will clear that data from PROGRAM 8 and replace it with the Express Timer data.

TO DISENGAGE THE TIMER

For safety, your recorder disables all other functions while in the timer mode.
- To use your recorder, first disengage the timer mode by pressing TIMER again. Now all functions will be operable.
- To re-engage the timer, press TIMER.

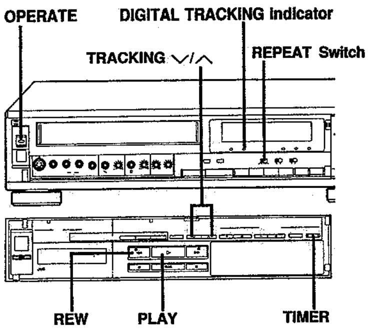
TO CHECK PROGRAMMED SETTINGS

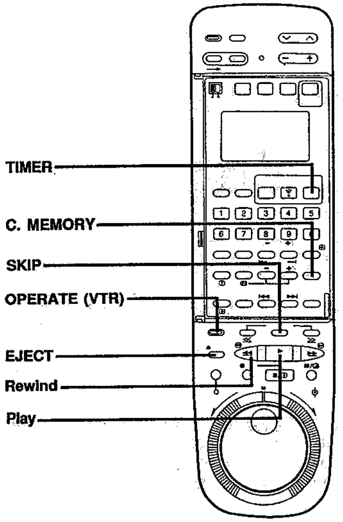
While in the timer mode, press START + to check the settings you have programmed into the Express Timer. Each time START + is pressed, the display will change: Start Time, Stop Time, Date, Channel, Tape Speed, and "TIMER" again. DO NOT press START + while the timer mode is disengaged because this will clear the Express Timer's memory to make room for a new entry.

For other timer programming methods, ☞ p.30.
Any questions? ☞ p.34.

For Playback

Take advantage of special functions possible with the recorder's controls or the remote control.





NOTE:

When a new tape is inserted, the recorder enters the automatic tracking mode automatically.

Repeat Playback (Recorder)

Your video recorder can automatically play back the whole tape or an index-marked portion 5 times repeatedly.

1 Set the REPEAT switch to FULL or INDEX.
- For Index Repeat playback, locate the index code at which you wish to start playback. (Index Search, ☞p.25.)

2 Press PLAY. Repeated playback will start. After repeating 5 times consecutively, playback will stop.
- Be sure to reset the REPEAT switch to OFF before pressing the PLAY button again; otherwise repeat playback will resume.

Manual Tracking (Recorder)

Your video recorder is equipped with automatic tracking control; the DIGITAL TRACKING indicator lights or blinks when automatic tracking is on. During playback, tracking can be adjusted manually using the TRACKING buttons.

1 Press TRACKING (∨ and ∧) simultaneously for manual override.
- The DIGITAL TRACKING indicator will go out.

2 Press TRACKING (∨ or ∧) to adjust tracking.

3 Press TRACKING (∨ and ∧) simultaneously to return to automatic tracking.

To adjust tracking during slow motion, simply press TRACKING (∨ or ∧) to obtain the best picture.

Next Function Memory (Recorder and Remote Control)

For automatic start of playback after the tape is rewound:

1 Press ◀◀ (Rewind).

2 Press ▶ (Play) within 2 seconds.

For automatic power off after the tape is rewound:

1 Press ◀◀ (Rewind).

2 Press OPERATE (VTR) within 2 seconds.

For automatic eject after the tape is rewound: (Remote Control only)

1 Press ◀◀ (Rewind).

2 Press EJECT within 2 seconds.

For automatic timer standby after the tape is rewound:

1 Press ◀◀ (Rewind).

2 Press TIMER within 2 seconds.

- If you want the "next function" to automatically start when the counter reads "0:00:00" (instead of at the beginning of the tape), press C. MEMORY so that the "M" mark appears before pressing ◀◀ (Rewind).

Skip Search (Remote Control)

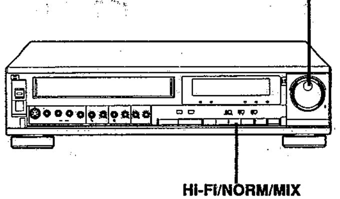
Your recorder offers a simple way of skipping over unwanted sections of recorded TV programmes.

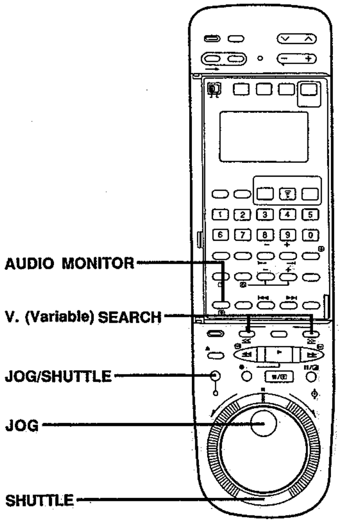
During Playback:

1 Press SKIP from 1 to 4 times.

This fast-motions through 30-sec. to 2-min. of tape.
- Playback resumes automatically.
- Press ▶ (Play) to cancel a Skip Search midway.

The recorder's Jog/Shuttle controls function in the same way as those on the remote control.





NOTES:

- If noise bars appear during slow motion, correct using manual tracking. ☞ p.22.
- During variable-speed search, some noise bars will appear.
- When playing back LP recordings in the search, still, or frame-by-frame playback mode, the picture will be distorted, and there may be a loss of colour.

Variable-Speed Search, Slow Motion, And Jog Control

You can view pictures in slow to fast motion, or frame-by-frame, in either direction.

During Play or Still:

1 Press JOG/SHUTTLE.
- The LED indicator will light.

2 Turn the outer ring (SHUTTLE) in either direction. The farther the ring is rotated, the faster the search speed. Releasing the ring stops the picture in the Still mode.

or

1 Press either V.SEARCH button. Tape will move in the corresponding direction.
- The more times the button is pressed, the faster the search speed.
- To decrease speed, press the button for the opposite direction.

During Play or Still:

1 Make sure that the LED indicator is lit.
- If not, press JOG/SHUTTLE.

2 Turn the inner dial (JOG) in either direction for jog control. The tape moves forward or backward frame-by-frame at the speed with which the dial is turned.

To resume normal playback, press ▶ button.

Soundtrack Selection

Your video recorder is capable of recording three soundtracks (HIFI L, HIFI R and NORM) simultaneously, and playing back the selected soundtrack.

- Pressing AUDIO MONITOR (on the remote control) changes the channel:

L+R → L → R

- Pressing Hi-Fi/NORM/MIX (on the recorder) changes the track:

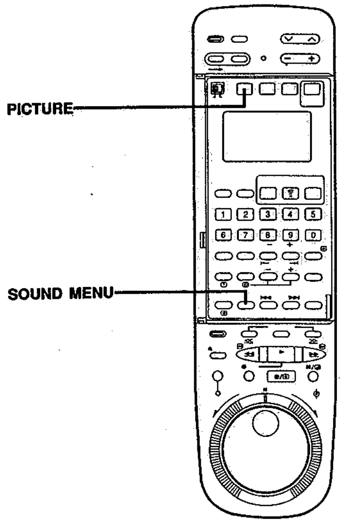
HIFI → NORM → MIX

Usual settings
HIFI L + R : for Hi-Fi stereo tapes
HIFI L or
HIFI R : for bilingual tapes
MIX L + R : for audio-dubbed tapes

NOTE:

Normally use the HIFI L + R position. Then Hi-Fi stereo tapes are played back in stereo, and tapes with normal audio only are played back automatically in the NORM mode.

▶ For Playback (cont'd)



Picture Control (Remote Control)

Your video recorder has a built-in video processor that lets you choose the type of playback picture that's best for any given application.

During Play:

1 Press PICTURE as many times as required to reach the desired setting.
- The display panel shows the setting for 5 seconds.

Display Panel	When To Use
ENHANCED	When viewing tapes with noise due to repeated playback, such as rental videos.
TAPE DUB	When editing from or to another recorder.
SOFT PIX	When you want a soft picture.
SHARP PIX	When you want a sharp picture.
OFF	When no modification is required.

Sound Menu (Remote Control)

Your recorder has a built-in sound processor that lets you enhance sound reproduction with Stereo Wide or Simulated Stereo effects. You can apply these effects not only to tape playback sound, but to TV signals received via the recorder's built-in tuner or external signals applied to the recorder's input connectors.

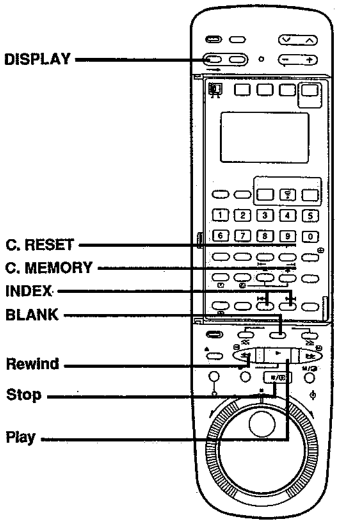
1 Press SOUND MENU as many times as required to reach the desired setting.

VCR Display	When to use
MUSIC - ST WIDE	When viewing stereo music programs.
THEATER - ST WIDE	When viewing stereo films.
MUSIC - SIM STEREO	When viewing monaural music or sports programs.
THEATER - SIM STEREO	When viewing monaural films.
OFF	When no modification is required.

NOTE:

- Sound Menu effects are available only with AV or S-VIDEO connection (☞ p.8 – 9).
  With only RF connection, Sound Menu effects are not available.

◀◀ ▶▶ For Tape Access



NOTES:

- Press ▶ (Play) or ■ (Stop) to cancel Index Search or Blank Search.
- If the end of the tape is reached during Index Search, the mode is cancelled and the tape is rewound to the beginning.
- When a fully recorded tape is used for re-recording new material, Blank Search can be used to detect the end of the new material.

Realtime Tape Counter

Your recorder's tape counter displays the hours, minutes, and seconds of a taped programme. During playback, your recorder's display panel will show a counter reading unless you change it using the DISPLAY button. To reset the counter to "0:00:00" at any time press C. RESET. Also the counter is automatically reset whenever you load a new cassette.

Counter Memory (Remote Control)

During Playback:

1 Press C. RESET at a point you wish to locate later.
- The counter will read "0: 00: 00".

2 Press C. MEMORY.
- "M" will appear in front of the counter digits.

3 When you wish to return to that point, press ■ (Stop) and then press ◀◀ (Rewind).
- The tape will rewind and stop at about "0: 00: 00" automatically.

M 0:00:00

4 To cancel the Counter Memory mode, press C. MEMORY.

Index Search (Remote Control)

This function gives you quick access to any one of 9 index codes in either direction. Your recorder automatically marks index codes at the beginning of each recording.

During Playback or Stop:

1 Press INDEX ⏮ or ⏭. "INDEX –1" or "INDEX +1" will be displayed and search will begin in the corresponding direction.

2 If you wish to access index codes 2 through 9, press INDEX repeatedly until the correct index number is displayed.
- When the specified index code is found, playback will start automatically.

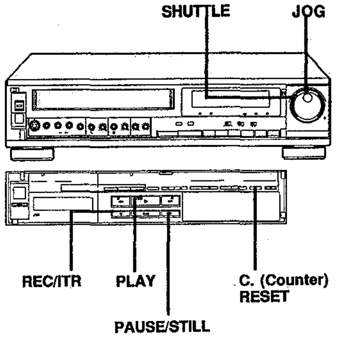
Blank Search (Remote Control)

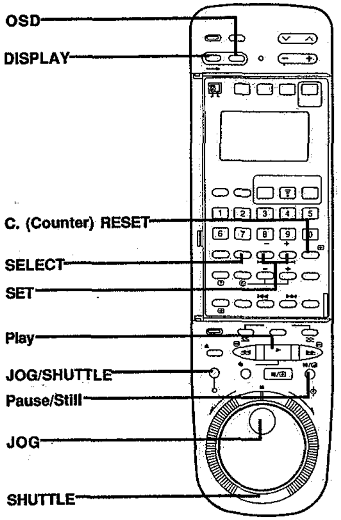
This function lets you quickly locate the blank portion of a partially recorded tape.

During Stop:

1 Press BLANK.
- The recorder automatically fast-forwards or rewinds to the end of the recorded portion of tape, and stops.
- The tape's remaining time is automatically displayed. Press DISPLAY to return to the realtime counter display.

For Recording





NOTE:
- The remaining time is inaccurate while the display is blinking. When blinking stops, the remaining time is shown.

Instant Timer Recording (Off Timer) (Recorder)

You can start a recording and then set the recorder to shut off automatically after a set duration.

During Record:

1 Press REC/ITR (on the recorder). A "REC SP 0:30" or "REC LP 0:30" indication appears, advising that power will switch off after 30 minutes.

REC SP 0:30

- "ITR 0:30" will be displayed on the TV screen.

2 Press REC/ITR again to delay the off-time by 30-minute increments (up to 4 hours).
- For a more precise setting, use the SELECT/SET buttons on the remote control unit to set the exact time required (possible up to 8 hours and 59 minutes).

Retake (Recorder and Remote Control)

You can cut out unwanted parts of a TV programme while you're recording it.

During Record:

1 Press PAUSE/STILL.

2 Turn the JOG dial or SHUTTLE ring in either direction to locate the beginning of the unwanted part.
- When using the remote control unit, first press the JOG/SHUTTLE button so that the LED indicator lights.
- Release the dial or ring to return to the Record-Pause mode.

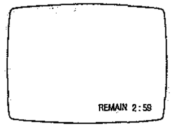
3 Press PLAY when you wish to resume recording.

Remaining Tape Time Indication
(Remote Control)

When you need to know the tape's remaining time.

1 Press DISPLAY until "REMAIN" appears on the screen. Approximate remaining tape time is displayed.

2 To clear the screen, press OSD.
- The display panel also shows remaining tape time, but, during recording, changes back to the "REC" mode display after 5 seconds.



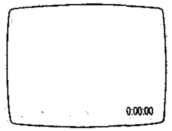
Elapsed Recording Time Indication
(Remote Control)

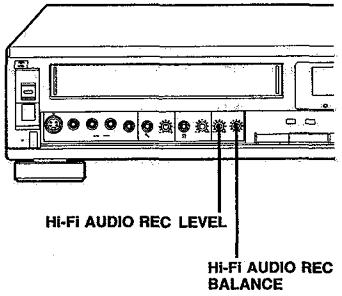
When you need to know the exact time of a recording.

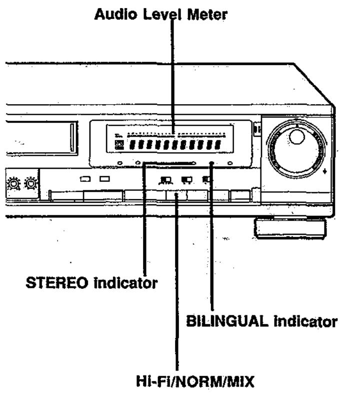
1 Press C. (Counter) RESET to reset the counter to "0:00:00" and then start recording.

2 Press DISPLAY anytime when you want to check the elapsed recording time.

3 To clear the screen, press OSD.







Hi-Fi Audio Recording Level Control

In most cases, setting the Hi-Fi AUDIO REC BALANCE and LEVEL controls to the center position will provide satisfactory results. If necessary, you can adjust the Hi-Fi audio recording level more precisely by referring to the audio level meter above the message display.
- Turn the BALANCE control to adjust the balance between left and right channels.
- Turn the LEVEL control to adjust the level. When the level meter lights up to or near 0 dB with the loudest signal being applied, the recording level is optimum.

NOTES:
- Make sure that the "HIFI L + R" position is selected with the AUDIO MONITOR button. ☞p.23.
- Noise will increase if the recording level is too low, while distortion will increase if the level is too high.

Stereo And Bilingual

Your recorder is equipped with a Sound-Multiplex decoder for reception of stereo and bilingual broadcasts.
- When a stereo programme is being received, the STEREO indicator lights.
- When a bilingual programme is being received, the BILINGUAL indicator lights.

To Record Stereo Programmes

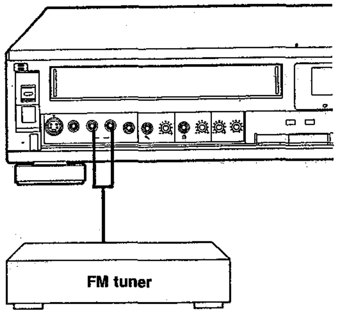
Stereo programmes are automatically recorded in stereo on the Hi-Fi audio track (with the normal audio track recording mixed L and R channel sound). No special operation is required. Simply follow the basic recording procedure.
- To listen to the stereo soundtrack while recording, select "HIFI L+R" with AUDIO MONITOR. ☞p.23

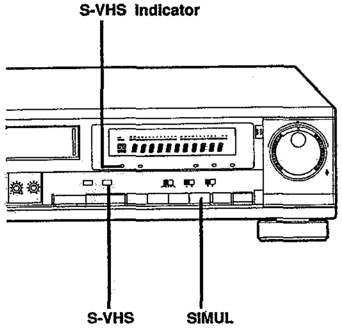
NOTE:
- If the quality of stereo sound being received is poor, the STEREO indicator will go off, and the broadcast will be received in monaural with better quality.

To Record Bilingual Programmes

Bilingual programmes are automatically recorded in bilingual on the Hi-Fi audio track. The main soundtrack will be recorded on the normal audio track.
- To listen to the Hi-Fi soundtrack during recording, select "HIFI L" for Main, and "HIFI R" for Sub.
- To listen to the normal soundtrack, select "NORM" with the Hi-Fi/NORM/MIX button on the recorder.

For Recording (cont'd)





Simulcast Recording

Your recorder lets you record an audio programme while recording a TV programme. In the Simulcast mode, the TV soundtrack is recorded on the normal audio track and the external audio programme is recorded on the Hi-Fi audio track, so you can have two independent programmes. If FM simulcast TV programmes are available, record the TV programme and its FM-broadcast soundtrack simultaneously.

PREPARATION

1. Connect the FM tuner to the rear panel AUDIO IN or front panel A (L,R) connectors.
   - Front panel connections have priority.
2. Set the FM tuner to the desired broadcast.

PROCEDURE

3. Select the TV programme you wish to record.
4. Press SIMUL. The SIMULCAST mode will be engaged.
5. Start recording.

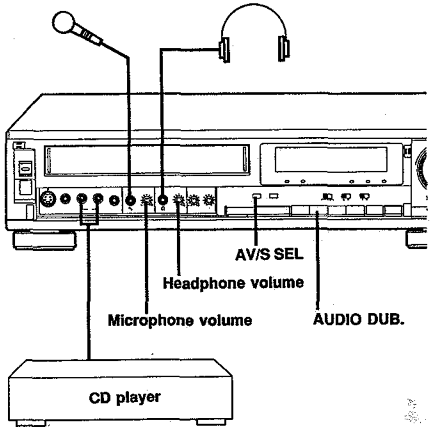
NOTES:
- If you stop recording with the PAUSE/STILL button to avoid unwanted TV programme material, the audio programme is also cut.
- After finishing simulcast recording, be sure to press the SIMUL button to cancel the Simulcast mode, otherwise it is not possible to record on the Hi-Fi track from the built-in tuner.

S-VHS And VHS

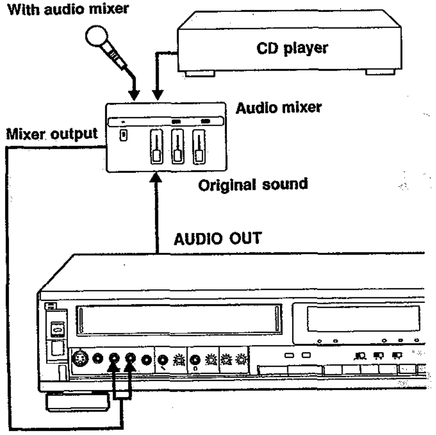
Your video recorder can record in either S-VHS or VHS.
- To record in S-VHS, insert a cassette marked "S-VHS". The S-VHS indicator will light and the S-VHS recording mode is automatically selected.
- To record in VHS, insert a cassette marked "VHS". The VHS recording mode is automatically selected.
- You can also record in VHS on S-VHS cassettes. For this purpose, after inserting an S-VHS cassette, press the S-VHS button. The S-VHS indicator will go out.

Your video recorder is well equipped to modify your recorded tapes into more attractive compositions.

Simple audio dubbing



With audio mixer



Audio Dubbing

Audio dubbing replaces the normal audio sound of a previously recorded tape with a new soundtrack. Add your personal touch by recording commentary, etc.

PREPARATION

1. Connect a microphone to the MIC jack.
2. Select the AUX INPUT 2 mode. (First engage the AUX INPUT mode with CHANNEL, then press AV/S SEL.)

PROCEDURE

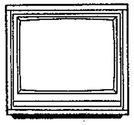
3. Adjust the input level with the microphone volume control.
4. Start playback and engage the Still mode at the point from which you wish to start audio dubbing.
   - Turn the SHUTTLE ring in either direction to quickly locate the desired scene. Simply release the SHUTTLE ring, and the Still mode will be engaged automatically.
   - Then turn the JOG dial for more precise location of the audio dubbing start point.
5. Press the AUDIO DUB button.
6. Press the PLAY button.
   - Audio dubbing will start.
7. Press the PAUSE/STILL button to stop audio dubbing temporarily.

NOTES:
- When monitoring the sound during Audio Dubbing, the normal soundtrack will be automatically selected. If you wish to hear the mixed sound (Hi-Fi + normal soundtracks), press the Hi-Fi/NORM/MIX button to select the MIX mode. ☞ p. 23
- Audio dubbing will stop automatically at the counter reading of "0:00:00", and the recorder will enter the Play mode. Check the counter before starting audio dubbing.
- If you wish to use audio sources other than microphone input, connect the audio equipment to the front panel A (Audio) L and R connectors. (For monaural equipment, use the L connector.) If both the microphone and another audio source are connected, mixed recording is possible in the FRONT AV mode.
- Audio dubbing is also possible with input via the rear panel AV1 IN/OUT, AV2 IN, or AUDIO IN. In these cases, select the appropriate input mode:
  With AV1 IN/OUT, select the AUX INPUT mode.
  With AV2 IN, select the AUX INPUT 2 mode.
  With AUDIO IN, select the S-INPUT mode.
  Front panel connections have priority. ☞ p. 41
- If howling occurs, move the microphone away from the TV or reduce the TV sound volume. If necessary, monitor the sound with headphones.

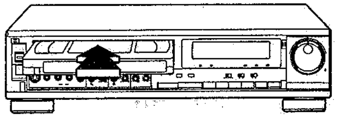
NOTE:
- Audio dubbing is not possible with cassettes whose safety tab has been removed.

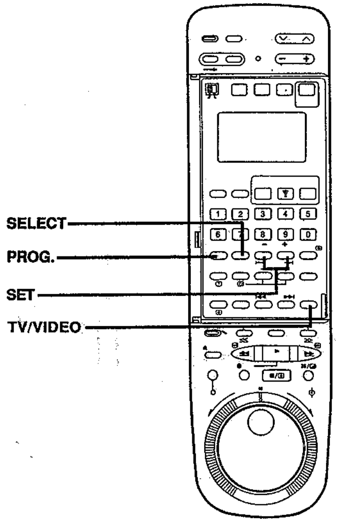
For Timer-Recording

The on-screen and LCD timer programming methods are introduced here. Both have different advantages. With on-screen programming, you can follow easy-to-see guides on your TV screen. With LCD programming, you can transfer the programmed data to the recorder anytime when necessary. TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.



POWER ON;
SELECT VIDEO CHANNEL
(OR AV MODE)





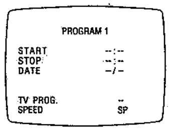
On-Screen Timer Programming

A LOAD A CASSETTE

1 Insert a cassette with the safety tab in place.
- The recorder power will come on automatically. Be sure that the VIDEO indicator is lit; if not, press TV/VIDEO so that it lights.

B ACCESS THE ON-SCREEN PROGRAM DISPLAY

2 Press PROG.
- You are ready to input data into Program No. 1.
- To change the program number (1–7), press SET.

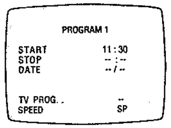


PROGRAM 1
START --:--
STOP --:--
DATE --/--
TV PROG. --
SPEED SP

C INPUT THE START TIME

3 Press SELECT, and then SET to input the hour.

4 Press SELECT, and then SET to input the minute.

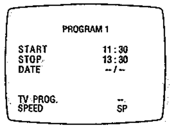


PROGRAM 1
START 11:30
STOP --:--
DATE --/--
TV PROG. --
SPEED SP

D INPUT THE STOP TIME

5 Press SELECT, and then SET to input the hour.

6 Press SELECT, and then SET to input the minute.

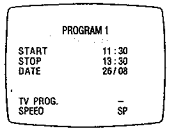


PROGRAM 1
START 11:30
STOP 13:30
DATE --/--
TV PROG. --
SPEED SP

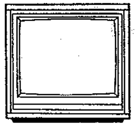
E INPUT THE DATE

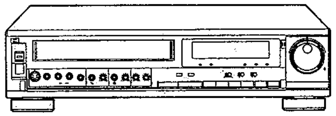
7 Press SELECT, and then SET to input the day.

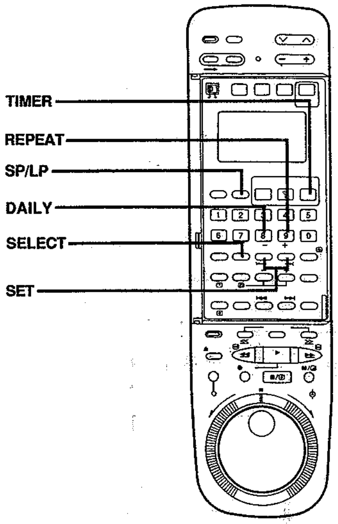
8 Press SELECT, and then SET to input the month.



PROGRAM 1
START 11:30
STOP 13:30
DATE 26/08
TV PROG. --
SPEED SP





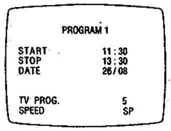


CAUTION:
Make sure that the tape length is enough to record the intended programme. If the tape finishes before the stop time is reached, the cassette is automatically ejected. If the recorder is placed inside a rack, there must be sufficient clearance to allow the front panel cover to open unobstructed.

NOTE:
The data you input will also be shown on the message display pannel.

F INPUT THE CHANNEL NUMBER

9 Press SELECT, and then SET to input the channel.
- The screen colour changes to green.



PROGRAM 1
START 11:30
STOP 13:30
DATE 26/08
TV PROG. 5
SPEED SP

G SELECT THE TAPE SPEED

10 Press SELECT, and then SP/LP.

H END ONE PROGRAM

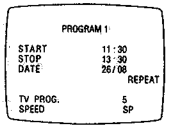
11 Press SELECT.
- The program number will blink.
- To make corrections, advance with SELECT to the item you wish to change and input new data with SET.
- If you need to set another program, press SET and repeat steps C through H.

I SET TO TIMER MODE

12 Press TIMER.
- The recorder will enter the timer mode and power will go off.
- Press TIMER again to release the timer mode.

Variations in Step E (Weekly Program)

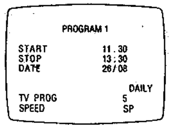
This function lets you set the recorder to timer-record at the same time on the same day every week. Use it to record weekly serials.
- First press REPEAT (numeric key "9") and then enter the date.



PROGRAM 1
START 11:30
STOP 13:30
DATE 26/08 REPEAT
TV PROG. 5
SPEED SP

Variations in Step E (Daily Program)

This function lets you set the recorder to timer-record at the same time everyday. Use it to record daily serials.
- To record a daily serial starting on the day of setting, press DAILY (numeric key "8") and then press SELECT.
- To record a daily serial starting on a certain day, press DAILY and then enter the date.



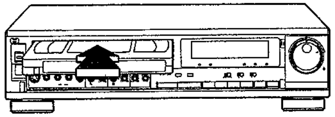
PROGRAM 1
START 11:30
STOP 13:30
DATE 26/08 DAILY
TV PROG 5
SPEED SP

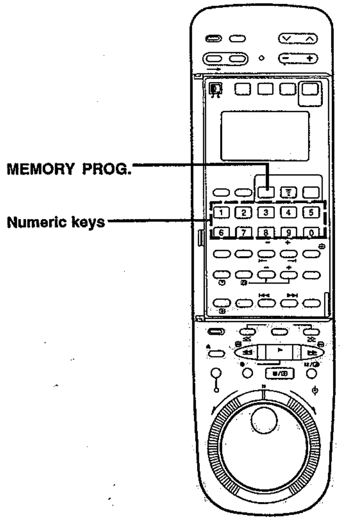
TO MAKE CORRECTIONS

Press SELECT so that the item you want to change blinks, and press SET to set the new data.

Any questions? ☞ p.34.

For Timer-Recording (cont'd)





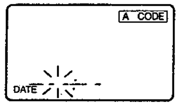
LCD Timer Programming

A LOAD A CASSETTE

1 Insert a cassette with the safety tab in place.
- The recorder power will come on automatically.

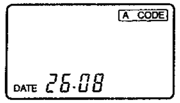
B ACCESS THE LCD TIMER PROGRAM

2 Press MEMORY PROG.



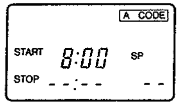
C INPUT THE DATE

3 Press the appropriate numeric keys.
- Example: For 26th August, press 2 6 0 8.



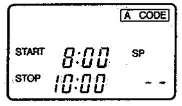
D INPUT THE START TIME

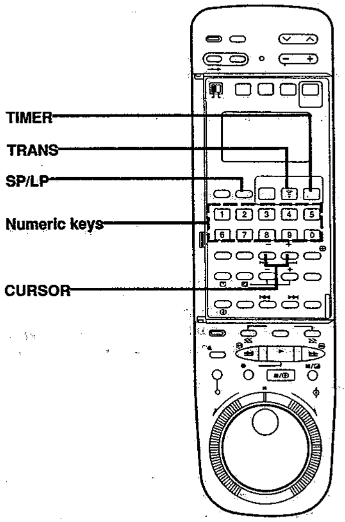
4 Press the appropriate numeric keys.
- Example: For 8:00, press 0 8 0 0.



E INPUT THE STOP TIME

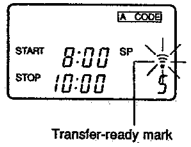
5 Press the appropriate numeric keys.
- Example: For 10:00, press 1 0 0 0.





F INPUT THE CHANNEL NUMBER

6 Press the appropriate numeric keys.
- Example: For channel 5, press 5.
- After the channel has been entered, the transfer-ready mark will appear and blink.



G SELECT THE TAPE SPEED

7 Press SP/LP.

H TRANSFER THE DATA TO THE RECORDER

8 Press TRANS with the remote control directed to the recorder's Remote Sensor window.
- You will see "PROGRAM 1" on the display panel, telling you that the data has been successfully transferred to the recorder's Program 1 memory.

I SET TO TIMER MODE

9 Press TIMER.
- The recorder will enter the timer mode and power will go off.
- To disengage the timer mode, press TIMER again.
- To return to the clock display, press MEMORY PROG.

Variations in Step C (Weekly Program)

This function lets you set the recorder to timer-record at the same time on the same day every week. Use it to record weekly serials.
- First press numeric key "9" (REPEAT) and then enter the date.

Variations in Step C (Daily Program)

This function lets you set the recorder to timer-record at the same time every day. Use it to record daily serials.
- To record a daily serial starting on the day of setting, press numeric key "8" (DAILY) and then press CURSOR → until the display changes to time input mode.
- To record a daily serial starting on a certain day, press numeric key "8" (DAILY) and then enter the date.

TO MAKE CORRECTIONS

During steps C – F, press either CURSOR button so that the item you want to change blinks, and enter new data.

Any questions? ☞ p.34.

For Timer-Recording (cont'd)

On Checking And Cancelling Programs

Since executed programs are automatically cleared from memory (except those for daily and weekly serials), cases where the entire memory is full should be rare. If this should happen, check the preset programs and cancel one or more to make room for the new program(s) you wish to input.

TO CANCEL A PROGRAM

1. Press PROG.
   - Program 1 is displayed with the number blinking.
2. Press SELECT to review the program contents in succession.
3. Press CANCEL to erase the program from memory.
   - You can press CANCEL at any stage while the program is open.
   - To erase another program, press SET when a blinking program number is displayed.

NOTE:

Cancelling programs is also possible using the remote control and on-screen display. Press PROG. and check the program contents on the screen using SELECT and SET. Press CANCEL while an unnecessary preset program is on the screen.

Some Facts On Timer Operation

- If the end of the tape is reached during timer-recording, the cassette is automatically ejected and recorder's power is switched off with "TIMER REC" and "TAPE END" flashing alternately on the message display panel.
- When timer-recording is successfully completed, the recorder's power is automatically switched off.
- Since the timer starts and stops recording based on the time being kept by the recorder's built-in clock, the clock's time must be accurate for correct timer-recording results.

Error Messages

The following error messages may appear on the message panel when you press the TIMER button to engage the Timer Standby mode. Here's why, and what you should do.

NO CASS

- Displayed for 5 seconds and the Timer Standby mode is cancelled.

WHY: There is no cassette in the recorder.
WHAT TO DO: Insert a cassette. Press TIMER again.

NO REC TAB

- Displayed for 5 seconds. The Timer Standby mode is cancelled.

WHY: The inserted cassette has its safety tab removed.
WHAT TO DO: Eject that cassette. Insert a cassette with its safety tab intact. Or cover the safety tab hole of the cassette with adhesive tape and re-insert it. Press TIMER again. ☞p.11.

NO PROGRAM

- Displayed for 5 seconds. The Timer Standby mode is cancelled.

WHY: There are no preset programs in memory.
WHAT TO DO: Check the programmed data and re-program it as necessary. Press TIMER again.

••

Other Messages

The following messages may also be encountered during timer-recording.

TIMER (with current hour)

WHY: The recorder is in the Timer Standby mode. This is the normal display you should see when you press the TIMER button.

TIMER REC

WHY: Normal display while timer-recording is in progress.

TAPE END

WHY: If this and "TIMER REC" are alternately displayed, it means that the end of the tape was reached while timer-recording was in progress. Therefore, the preset program may not be recorded in its entirety.

SET CLOCK

WHY: This means the clock must be set. It's displayed when time-keeping is terminated due to a power failure or because the recorder's power plug was pulled from the AC outlet.
WHAT TO DO: Set the clock. ☞p.12.

- If power was interrupted, it's also likely that all preset timer programming data has been erased. Please check and re-program as necessary.

The following messages may be encountered when the TRANS button of the remote control is pressed. ☞p.33.

PROGRAM (with number)

- Displayed for 5 seconds.

WHY: The transferred data has been stored in that program number. (The smallest vacant program number is always selected automatically.)

TRANS ERR

- Displayed for 5 seconds.

WHY: Data was not successfully transferred. The program may have been incorrectly preset, or the recorder's clock has not been set.
WHAT TO DO: Check the LCD program, and re-program as necessary. Transfer the correct data.

PROG FULL

- Displayed for 5 seconds.

WHY: All the recorder's timer programs (1 – 7) are preset.
WHAT TO DO: Cancel unnecessary programs, and transfer again.

For Convenience

Setting The Clock Forward Or Backward By One Hour (Daylight Saving Time Adjustment)

TO ADVANCE THE TIME BY ONE HOUR

1 Press the remote control's SUMMER TIME ADJUST button and quickly release.

2 Press the TRANS button.
- The revised time is transferred to the recorder.

TO SET THE TIME BACK BY ONE HOUR

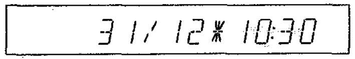
1 Keep SUMMER TIME ADJUST pressed for more than 2 seconds.

2 Press the TRANS button.
- The revised time is transferred to the recorder.

Locking The Recorder's Controls

To avoid unwanted operation and prevent accidental recording or other interference, use the Child Lock function.

1 Press the remote control's OPERATE (VTR) button to turn the recorder's power off. Keep this button pressed for about 2 more seconds after the power LED indicator has gone off.
- The Child Lock indicator (✱) will appear between the date and time on the display panel.



2 Child Lock is automatically deactivated when you switch the recorder's power on again with the remote's OPERATE (VTR) button.
- Pressing the TIMER button during timer-recording also deactivates the Child Lock mode.

NOTES:
- While the Child Lock mode is engaged, make sure you keep your remote control in a safe place inaccessible to children.
- Timer-recording is possible in the Child Lock mode. After timer-recording has been performed, the Child Lock mode remains in effect.

Remote A/B Code Switching

The remote control is capable of controlling two JVC video recorders independently; one set to respond to your remote control's A code control signals and another set to respond to B code control signals. The remote control is preset to send A code signals (indicated by " A CODE " on the LCD) because your video recorder is initially set to respond to A code signals. You can easily modify your video recorder to respond to B code signals.

1 Unplug the recorder's power cord from the AC outlet.

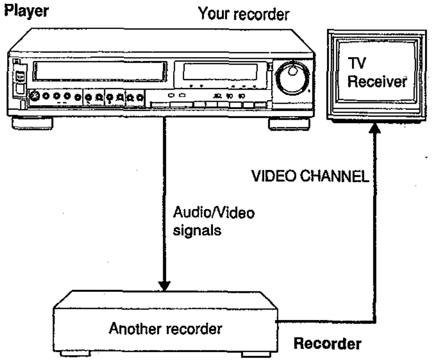
2 Set the A/B CODE switch to B. (" B CODE " will appear on the LCD.)

3 Plug the power cord back into the AC outlet. Do not use other remote controls at this stage.

4 Turn the recorder power on using the remote control's OPERATE (VTR) button. The recorder will now only respond to B code signals.

NOTE:
Some TV sets may malfunction in response to the B mode. If this happens switch back to the A mode.

For Editing



Advantages Of S-VHS Video Recorders

You can edit from VHS to S-VHS, S-VHS to VHS, or, needless to say, from S-VHS to S-VHS.
- From VHS to S-VHS: Record VHS playback signals in the S-VHS mode. Although the picture quality is inherently limited by that of the original, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to VHS: Because the picture quality of the source material is very high, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to S-VHS: All signals will be transferred without degradation

Editing To Another Recorder

In tape-to-tape editing, your recorder can also be used as the playback unit.

PREPARATION

1 Connect your recorder's AV1 IN/OUT or S OUT/AUDIO OUT to the audio and video input connectors of the recording deck.

2 Load the source tape in the player and the recording tape in the recorder.

3 Select the TAPE DUB mode with the remote's PICTURE button. ☞ p.24

4 Engage the recorder's AUX mode.

OPERATION

5 Put the recorder in the Record-Pause mode.

6 Play back the source tape to search for a scene to be edited.
- Turn the SHUTTLE ring in either direction to quickly locate the desired scene. Simply release the SHUTTLE ring, and the Still mode will be engaged automatically.
- Then turn the JOG dial for more precise location of the scene to be edited.

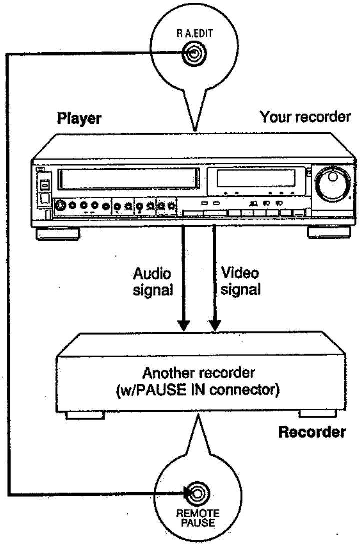
7 Press both the player's and recorder's PLAY buttons simultaneously.

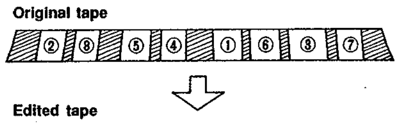
8 Press the recorder's PAUSE button to stop editing.

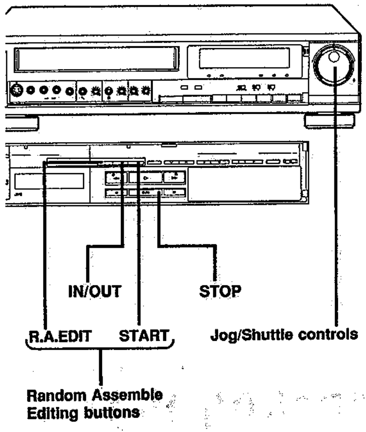
9 Repeat steps 6 through 8 to continue editing.

NOTE:
- If you do not want to record on-screen messages on the edited tape, cancel the on-screen display. ☞ p.17

For Editing (cont'd)


R.A.EDIT
Player
Your recorder
Audio signal
Video signal
Another recorder (w/PAUSE IN connector)
Recorder
REMOTE PAUSE


Original tape
② ⑧ ⑤ ④ ① ⑥ ③ ⑦
Edited tape
① ② ③ ④ ⑤ ⑥ ⑦ ⑧


IN/OUT
STOP
R.A.EDIT
START
Jog/Shuttle controls
Random Assemble Editing buttons

Random Assemble Editing

This function makes it easier to create edited videos when your recorder is used as the source player in combination with another video deck which is equipped with a PAUSE (i.e. remote PAUSE IN) terminal. You can pre-program up to 8 scenes or "cuts" for automatic editing in the sequence you have specified.

PREPARATION

1 Connect your recorder's AV1 IN/OUT or S OUT/AUDIO OUT to the audio and video input connectors of the recording deck.

2 Connect your recorder's R.A.EDIT connector to the recording deck's PAUSE connector.

3 Turn both units on.

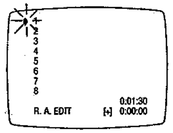
4 Engage the recorder's AUX mode.

OPERATION

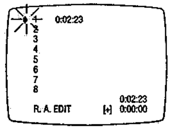
5 Insert a recorded cassette into your recorder, and insert a cassette (with safety tab intact) into the recording deck.

6 Play back the tape in your recorder.

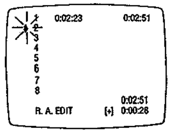
7 Press the R.A.EDIT button.
- On-screen display is superimposed on the video playback.


1
2
3
4
5
6
7
8
0:01:30
R. A. EDIT
[+] 0:00:00

8 Use the Jog/Shuttle to search for the point where you want an edited scene to start, and press IN/OUT.
- The cut-in point is registered in memory.


1 0:02:23
2
3
4
5
6
7
8
0:02:23
R. A. EDIT
[+] 0:00:00

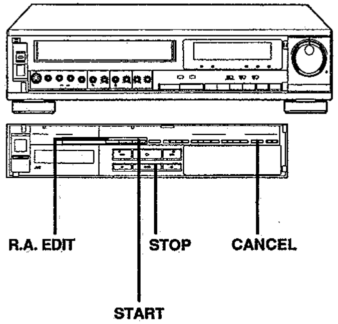
9 Use the Jog/Shuttle to search for the point where you want the scene to end, and press IN/OUT.
- The cut-out point is registered in memory.
- The total reading "[+]" displays the total running time of the edited scenes.


1 0:02:23 0:02:51
2
3
4
5
6
7
8
0:02:51
R. A. EDIT
[+] 0:00:28

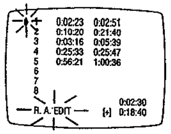
10 Specify additional scenes by repeating steps 8 – 9.

11 Put the recording deck in the Record-Pause mode.

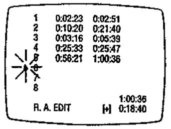
Continued on next page.


R.A. EDIT
STOP
CANCEL
START

12 Press START.
- The function begins automatic editing; all the specified scenes are copied to the recording deck in sequential order.
- The on-screen display remains superimposed while your recorder searches for each scene (the blinking cursor points to the scene number presently being searched), and is not displayed while the scenes are being edited.


1 0:02:23 0:02:51
2 0:10:20 0:21:40
3 0:03:16 0:05:39
4 0:25:33 0:25:47
5 0:56:21 1:00:36
6
7
8
0:02:30
R. A. EDIT
[+] 0:18:40

- While a scene is being searched, the recording deck automatically enters the Record-Pause mode.
- When Random Assemble Editing is finished, your recorder enters the Still mode, the recording deck enters the Record-Pause mode, and the cursor blinks at the next available scene number.

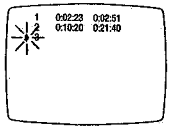

1 0:02:23 0:02:51
2 0:10:20 0:21:40
3 0:03:16 0:05:39
4 0:25:33 0:25:47
5 0:56:21 1:00:36
6
7
8
1:00:36
R. A. EDIT
[+] 0:18:40

13 Press R.A.EDIT again.
- The on-screen display disappears.

14 Press STOP on both decks to end Random Assemble Editing.

TO MAKE CORRECTIONS

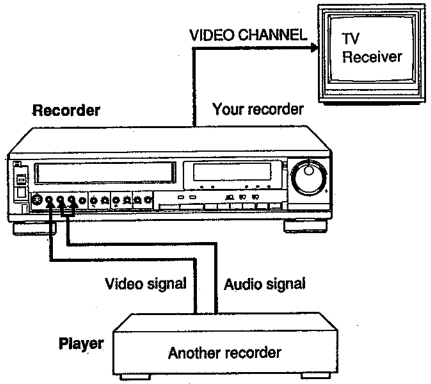
During step 8 or 9, you can correct a cut-in or cut-out point. Each time the CANCEL button is pressed, the immediately preceding point is cleared and can be re-set.
- Example: Here, the cut-out point for "2" can be changed by pressing CANCEL once (to clear it) and re-setting it.By pressing CANCEL more times, you can back up to previous points for re-setting, but all points in between will be cleared in the process. (e.g. To reach the cut-out point for "1", the cut-in and -out points for "2" will be cleared.)

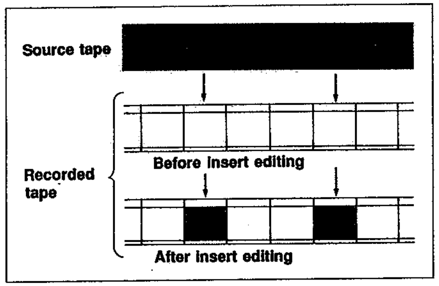

1 0:02:23 0:02:51
2 0:10:20 0:21:40
3

NOTES:

- When editing, there may be a discrepancy of about 2 seconds on the playback tape between the locations you chose as cut-in/out points and the locations the recorder recognizes as those points.
- For any scene, the cut-out point must have a counter reading that is at least 1 second after the cut-in point. A cut-out point with a counter reading less than or the same as the cut-in point will not be registered.
- Since the playback deck prerolls during Random Assemble Editing, there must be at least 15 seconds worth of recorded material prior to any cut-in point on the playback tape.
- If the search time for a cut-in point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.

For Editing (cont'd)





NOTES:

- Suitable leads can be obtained from your dealer.
- If you do not want to record on-screen messages on the edited tape, cancel the on-screen display. ☞ p.17
- Insert editing is not possible with cassettes whose safety tab has been removed.
- Insert editing cannot be started from a non-recorded segment.
- In insert editing, the recording speed (SP/LP) is determined by the previous recording to be replaced. If the previous recording's speed changes within a single edit, the inserted picture will be distorted at the switching point.

Editing From Another Recorder

Tape-to-tape editing is possible using another deck as the playback unit and your recorder as the recording unit.

PREPARATION

1 Connect another video recorder to your recorder.
  - To select the input connectors and the corresponding external input mode, refer to the table on next page.

2 Engage the external input mode.

3 Select the TAPE DUB mode with the remote's PICTURE button. ☞ p.24

OPERATION

4 Load the source tape in the player, and the recording tape in your recorder.

5 Select the recording speed (SP or LP).

6 Put your recorder in the Record-Pause mode.

7 Play back the source tape to search for scene to be edited.

8 Press the recorder's PLAY button where you want to start editing.

9 Press the recorder's PAUSE button to stop editing.

10 Repeat steps 7 through 9 to continue editing.

Insert Editing

OPERATION

Insert editing replaces part of the recorded scene with new material. Both the picture and Hi-Fi audio soundtrack are replaced with new ones, while the normal audio soundtrack remains unchanged. If you wish to change the normal audio track as well, use the audio dubbing function simultaneously.

Follow the above "Preparation" instructions and then...

1 Load the source tape in the player, and the recording tape in your recorder.

2 Play back the recording tape and determine the edit-out point (the end of the segment to be replaced) using the JOG/SHUTTLE controls.
  - Releasing the JOG/SHUTTLE controls engages the Still mode.

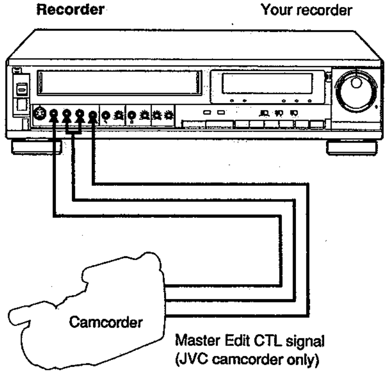
3 Press C. RESET. (0:00:00)

4 Determine the edit-in point (the beginning of the segment to be replaced) using the JOG/SHUTTLE controls.

5 Press INSERT. (Insert-Pause mode)
  - For simultaneous replacement of the normal audio soundtrack, press AUDIO DUB as well.
  - The TV screen changes from the still picture to the input signal you are going to record.

6 Play back the segment of the source tape to be inserted.

7 Press PLAY.
  - Insert editing will start. At counter 0:00:00, insert editing will stop automatically while the tape continues running in the Play mode.
  - If you wish to stop insert editing before the specified edit-out point, press C. RESET.



Editing From A Camcorder

Tape-to-tape editing is also possible using a JVC camcorder (equipped with playback facility) as the player and your recorder as the recording deck. In this case, the recorder's REMOTE PAUSE terminal can be used to accept Master Edit Control commands from the camcorder.

PREPARATION

1 Connect the camcorder's AV OUT or AV/S OUT connector to the recorder's front panel INPUT connectors.

2 Connect the AV or AV/S output cable's mini-plug to the REMOTE PAUSE terminal of the recorder.

3 Select the FRONT AV or FRONT <S> mode (refer to the table below).

4 Select the TAPE DUB mode with the remote's PICTURE button. ☞ p.24
  - If the comcorder is equipped with the Master Edit Control system, you can control the recorder using the camcorder's controls. See the camcorder's instruction manual for operating procedures.
  - With this connection, you can also use the camcorder as a video camera for direct recording onto the recorder's tape. Put the recorder in Record-Pause and use the camcorder's start/stop trigger to start and pause recording. (For direct recording with a separate video camera, a camera adapter is necessary.)

How To Select The External Input Mode

	Connector	Procedure	Display Panel
REAR	AV1 IN/OUT	Press TV PROGRAM or remote's "0" key.	AUX INPUT
	AV2 IN	Press AV/S SEL while in the AUX INPUT mode.	AUX INPUT 2
	S IN and AUDIO IN	Press AV/S SEL while in the AUX INPUT 2 mode.	S-INPUT
FRONT	V and A (L,R)	Press TV PROGRAM or remote's "0" key.	FRONT AV
	S-VHS and A (L,R)	Press AV/S SEL while in the FRONT AV mode.	FRONT <S>

NOTES:

- Connections made to the front panel Video and Audio inputs automatically override the rear panel AUDIO/VIDEO input connection. If you wish to edit with another machine connected to the rear input connector, make sure that there is nothing connected to the front connectors.
- Use the L connector for monaural connection.

For Reception

Changing Preset Channels

TO CHECK STORED REAL CHANNELS

Use the remote control. First turn on the recorder.

1. Press CHANNEL (VTR) to select the channel position of the stored real channel whose number you want to know. (e.g. PR. 10)
2. Press CH SET.

STORED 10

⬇

REAL Ch28

- This indicates that channel position 10 stores real channel 28.

3. To check other channel positions, press CHANNEL (VTR).
   - Either "STORED xx" or "SKIPPED xx" will appear, followed by "REAL Ch xx".
4. The Channel Set mode will be cancelled in about 60 seconds unless you call up another channel position.

TO DELETE STORED CHANNELS

Use the remote control. First turn on the recorder.

1. Press CHANNEL (VTR) to select the channel position you want to skip. (e.g. PR. 10)
2. Press CH SET.

STORED 10

3. Press SKIP.

SKIPPED 10

⬇

REAL Ch28

- This indicates that real channel 28 has been deleted from channel position 10.

TO STORE NEW CHANNELS

Use the remote control. First turn on the recorder.

1. Press CH SET.

REAL Ch28

2. Press CH SET again and keep it pressed until the real channel number starts blinking.
3. Press numeric keys to input the number of the real channel you want to store. (e.g. Ch 28.)

REAL Ch28

⬇

SKIPPED 10

4. Press numeric keys to input the number of a vacant channel position (e.g. 20), and hold the key for the 2nd entry until the display changes to "STORED 20".

STORED 20

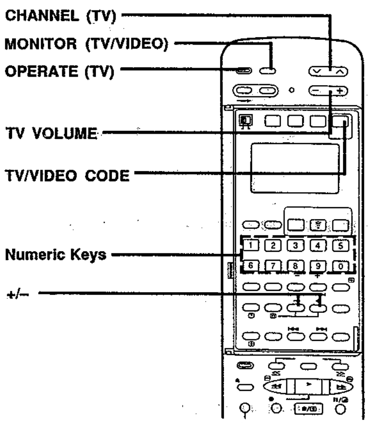
⬇

REAL Ch28

- The Channel Set mode will be cancelled automatically after about 60 seconds.

Using The Remote Control For TV Operation

The provided remote control can operate the basic functions of your television. In addition to JVC televisions, other manufacturers' televisions listed here can also be controlled by setting the remote control to the corresponding TV code. The remote control's default code is "1", which enables control of most JVC televisions without re-setting. If your JVC television is equipped with 10+ and 20+ buttons on its remote control, you have to set the TV code to "2".

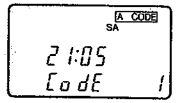


CODE	TV BRAND NAME
1	JVC
2	JVC
3	BRANDT NORDMENDE SABA TELEAVIA TELEFUNKEN THOMSON
4	FERGUSON
5	PHILIPS
6	BLAUPUNKT GRUNDIG
7	SONY
8	PANASONIC
9	PANASONIC
0	GRAETZ ITT LUXOR SALORA SELECO

IMPORTANT

Although the provided remote control unit is compatible with JVC televisions, as well as many TV models manufactured by others, it is possible that the provided remote control will not work with your TV, or in some instances, will have limited function capability.

Setting The TV Code



1. Press TV/VIDEO CODE for longer than 2 seconds.
   - The LCD will show the current code (initially "Code 1").
2. Press a numeric key corresponding to the code number for your TV's brand.
   - The LCD will return to the clock mode after 2 seconds.

NOTES:

- TV code setting is not possible unless the clock has been set.
- Whenever you replace batteries in the remote control or initialise the LCD memory (☞p.5), it is necessary to re-set the TV code, if your television is not a Code 1 JVC TV.

To Control Your Television With Buttons Exclusively For TV

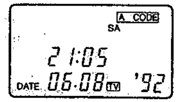
- Press OPERATE (TV) to turn the TV power on.
- Press MONITOR (TV/VIDEO) to switch the TV between TV and VIDEO (or AV) mode.
- Press CHANNEL (TV) to select the TV's channel.
- Press TV VOLUME to adjust the TV's sound volume.

NOTES:

- The CHANNEL (TV) button does not function with televisions using Code 3.
- The MONITOR (TV/VIDEO) button does not function with televisions using Code 4.
- With some televisions, the OPERATE (TV) button functions only to turn the TV power off, and the MONITOR (TV/VIDEO) button functions only to switch the TV to the VIDEO (AV) mode.

To Control Your Television With Additional Buttons

The numeric keys can also be used to select the TV's channel by setting the remote control to the TV mode.



1. Press TV/VIDEO CODE.
   - "TV" will appear on the LCD.
2. Use the numeric keys and +/– to select the TV's channel while "TV" is on the LCD.
   - With televisions using Code 1, 4, 5, 7, 8 or 9, both the +/– buttons correspond to the 1-digit/2-digit entry switching button (often labelled -/--) of your TV's remote control.
   - With televisions using Code 2, 6, or 0, the – button corresponds to the 10+ button, and the + button, to the 20 + button of your TV's remote control.

NOTE:

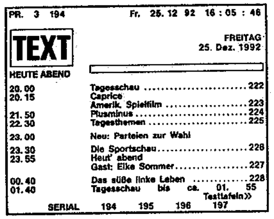
The way these buttons are used is determined by your TV. Use these buttons as instructed for your TV's remote control.

Using The Optional Teletext Adapter

Teletext services have established themselves as one of the most flexible sources of information and broadcast schedules available to TV and video users. Your video recorder is ready to take full advantage of these services. By connecting an optional teletext adapter (☞ Specifications), you'll not only be able to view the vast number of teletext pages now available, you'll be able to transfer broadcast schedule data directly to your recorder's timer for instant, automatic timer programming. You'll also be able to make full use of your remote control's capabilities, with all the dual or triple function controls working as intended. Here are just a few examples of features available to you when you connect an optional teletext adapter.

TELETEXT

- View broadcast teletext pages.
- Several page access modes are available for quick, convenient location of pages you want to see.
- You can program the video recorder's timer directly using TV schedule pages.



PR. 3 194 Fr. 25. 12 92 16 : 05 : 46

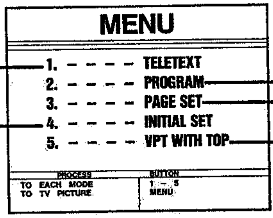
TEXT

FREITAG
25. Dez. 1992

HEUTE ABEND

20. 00	Tagesschau	222
20. 15	Caprice Amerik. Spielfilm	223
21. 50	Plusminus	224
22. 30	Tagesthemen	225
23. 00	Neu: Parteien zur Wahl	
23. 30	Die Sportschau	226
23. 55	Heut' abend Gast: Elke Sommer	227
00. 40	Das süße linke Leben	228
01. 40	Tagesschau bis ca. 01. 55 Testtafeln»	

SERIAL 194 195 196 197



MENU

1. - - - - TELETEXT
2. - - - - PROGRAM
3. - - - - PAGE SET
4. - - - - INITIAL SET
5. - - - - VPT WITH TOP

PROCESS	BUTTON
TO EACH MODE	1 – 5
TO TV PICTURE	MENU

INITIAL SET

LANGUAGE

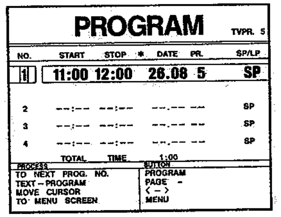
- Select one of four languages (English, German, Italian, or Swedish) for on-screen messages.

CLOCK ADJUST

- Set the recorder's clock manually using the numeric keys.
- Set the recorder's clock automatically by reading teletext time information.

PROGRAM

- Check timer recording data on the colour on-screen display.
- Program the timer manually with the remote's numeric keys.



PROGRAM TVPR. 5

NO.	START	STOP	✱	DATE	PR.	SP/LP
1	11:00	12:00		26.08	5	SP
2	--:--	--:--		--.--	--	SP
3	--:--	--:--		--.--	--	SP
4	--:--	--:--		--.--	--	SP

TOTAL TIME 1:00

PROCESS	BUTTON
TO NEXT PROG. NO.	PROGRAM
TEXT – PROGRAM	PAGE –
MOVE CURSOR	< – >
TO MENU SCREEN	MENU

PAGE SET

- You can preset favourite or often-referred-to pages for immediate access.
- Up to four pages can be stored on each of the numeric keys, for a total of 40 pages.

VPT WITH TOP

- TOP automatic teletext timer programming.
- Convenient colour-coded page access.
  "5.– – – – VPT WITH TOP" only appears when the video recorder's tuner is tuned to a station transmitting TOP broadcasts. (Applicable only in certain areas.)

ATTENTION

Some buttons on the remote control unit are labelled with pictograms indicating the functions that can be used when the VPT adapter is connected. When reading the VPT adapter's instruction manual, keep in mind the correspondence between these pictograms and the labels referred to in the instruction manual:

⊜ : LARGE/NORMAL
⍰ : REVEAL
◷ : TIMED PAGE
⊛ : RESET
⊕ : HOLD
◩ : MIX
→ : ROTATE

Display Panel Messages

Messages not appearing elsewhere in this manual are listed here. More common messages are all clearly illustrated in the relevant sections.

Displayed Message	When It Appears, What It Means
During Clock Set	
31/12 10:30	"31st December, 10:30" is successfully transferred.
During Channel Set	
REAL Ch 02	"Real Channel 02 in Ch band" is stored.
REAL Ch :02	"Real Channel 02 in Ch band" is received, but not stored.
FINE -Ch 02	"Fine tuning" is engaged for "Real Channel 02 in Ch band".
During Normal Operation	
SPEED SP	Tape speed is changed from LP to SP. Displayed for 5 seconds.
SPEED LP	Tape speed is changed from SP to LP. Displayed for 5 seconds.
AUDIO DUB	Audio dubbing is in progress.
A DUB P	Audio dubbing is paused.
INSERT	Insert editing is in progress.
INSERT P	Insert editing is paused.
AV DUB	AV dubbing (combined use of insert editing and audio dubbing) is in progress.
AV DUB P	AV dubbing is paused.
AUX INPUT	External input is selected.
AUX INPUT 2	External input 2 is selected by pressing the AV/S SEL button from AUX INPUT.
S-INPUT	External input via rear panel S IN/AUDIO IN is selected.
FRONT AV	External input via front panel V/A/L/R is selected.
FRONT <S>	External input via front panel S-VHS/L/R is selected.
SIMULCAST	Simulcast recording is selected by pressing the SIMUL button. Displayed for 5 seconds.
REC SP AUX	Recording "External Input" via AUDIO/VIDEO in the SP mode.
REC SP AU2	Recording "External Input" via AUDIO IN in the SP mode.
REC SP <S>	Recording "External Input" via S IN/AUDIO IN or S-VHS/L/R in the SP mode.
PAUSE AUX	Recording is paused during REC SP (or LP) AUX.
PAUSE AU2	Recording is paused during REC SP (or LP) AU2.
PAUSE <S>	Recording is paused during REC SP (or LP) <S>.
SKIP	Skip Search is started. Displayed for 5 seconds.
BLANK	Blank Search is started. Changes to REMAIN after 5 seconds.
INDEX +9	Searching for the 9th index code in the forward direction.
INDEX –4	Searching for the 4th index code in the reverse direction.
INDEX MARK	Index code is being marked.
REPEAT	Blinking during rewind for Repeat Playback.

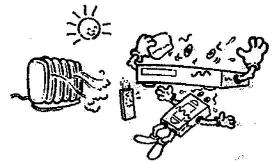
Displayed Message	When It Appears, What It Means
During Next Function Memory	
REW – OFF ↩ OFF	Will rewind to the beginning and then shut off automatically.
REW – PLAY ↩ PLAY	Will rewind to the beginning and then start playback automatically.
REW – TIMER ↩ TIMER	Will rewind to the beginning and then enter the timer mode automatically.
REW – EJECT ↩ EJECT	Will rewind to the beginning and then eject the tape automatically.
Clock and Counter Displays	
4:30:15	Tape counter reading of "4 hours, 30 minutes, 15 seconds".
31/12 10:30	It is 31st December, 10:30. (Standard date/time display when recorder power is turned off)
31/12 ✗ 10:30	Same as above with Child Lock ON.
REC LP 1:30	Recording in the LP mode with the Off Timer set to shut off in 1 hour 30 minutes.
TIMER ✗ 10:30	It is 10:30 and the Timer Standby mode is engaged with Child Lock ON.
SET CLOCK ✗	The clock is not set. Please set it. The recorder is locked with Child Lock ON..
Other Messages	
GOOD ↩ MORNING GOOD ↩ AFTERNOON GOOD ↩ EVENING	Automatic greetings when the recorder is turned on.
GOOD-BYE GOOD NIGHT	Automatic greetings when the recorder is turned off.

NOTE:

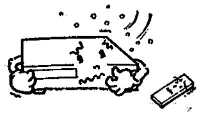
This list represents the various types of messages your recorder is capable of generating. Actual messages displayed by your recorder (esp. if date, time, channel, tape counter reading, or other variables are involved) will differ slightly from those listed here.

Precautions

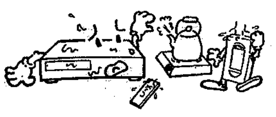
Please follow these safety precautions. Not doing so may result in damage to the recorder, remote control, or video cassette.



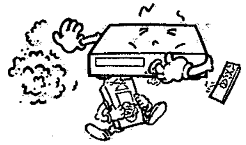
Avoid extreme heat and direct sunlight



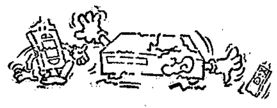
Avoid extreme cold



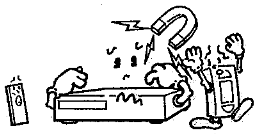
Avoid extreme humidity



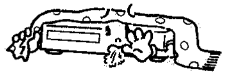
Avoid dust



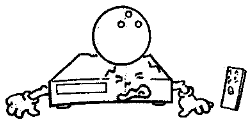
Avoid places subject to vibrations



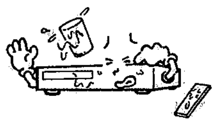
Avoid strong magnetic fields



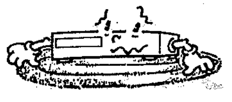
Do not block the recorder's ventilation openings



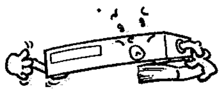
Do not place anything heavy on the recorder or remote control



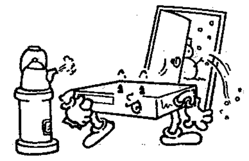
Do not place anything which might spill on top of the recorder or remote control



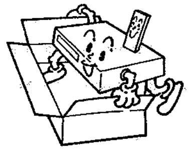
Do not place the recorder on cushions, pillows, or thick carpeting



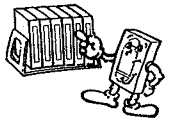
Use the recorder in a stable, horizontal position only



Beware of moisture condensation
Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions — just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder's power turned on for a few hours to let the moisture dry.



When transporting
- Be sure to remove cassette from recorder before packing
- Avoid violent shocks to the recorder during packing and transport



Place cassettes in cassette cases and store vertically

Specifications

GENERAL

Power requirement : AC 220 – 240 V∿, 50/60 Hz
Power consumption : 39 W
Temperature : 5°C to 40°C (Operating)
: –20°C to 60°C (Storage)
Operating position : Horizontal only
Dimensions (WxHxD) : 435 x 108 x 390 mm
Weight : 7.1 kg
Format : S-VHS/VHS PAL standard
Tape width : 12.65 mm
Tape speed (SP) : 23.39 mm/sec
Tape speed (LP) : 11.70 mm/sec
Maximum recording time (SP) : 240 min. with E-240 video cassette
(LP) : 480 min. with E-240 video cassette

VIDEO

Signal system : PAL colour and CCIR monochrome signals, 625 lines/50 fields
Recording system : Rotary two-head helical scan system with slant double-azimuth combination video heads
Input : 0.5 to 2.0 Vp-p, 75 ohms, unbalanced
Output : 1.0 Vp-p, 75 ohms, unbalanced
Signal-to-noise ratio : 43 dB (Rohde & Schwarz noise meter)
Horizontal resolution : 250 lines (VHS)
400 lines (S-VHS)

AUDIO

Input : Mic:–67 dBs, high impedance, unbalanced
: AUDIO IN connector (RCA x 2): –8 dBs, 50 k-ohms, unbalanced
: AUDIO/VIDEO socket (21-pin Peri connector):–3.8 dBs, (CENELEC standard), 10 k-ohms, unbalanced
Output : AUDIO OUT connector (RCA x 2): –6 dBs, high-impedance load less than 1 k-ohm, unbalanced (100 k-ohms, load)
: AUDIO/VIDEO socket (21-pin Peri connector):–3.8 dBs, (CENELEC standard), high-impedance load less than 1 k-ohm, unbalanced

NORMAL AUDIO

Recording system : Longitudinal track
No. of audio channels : 1 (monaural)
Frequency range : 70 Hz to 10,000 Hz

Hi-Fi AUDIO

Recording system : Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels : 2 Hi-Fi audio channels
Frequency response : 20 Hz to 20,000 Hz
Dynamic range : More than 90 dB
Wow and flutter : Less than 0.005% WRMS

TUNER

Tuning system : Frequency synthesized tuner
TV channel storage capacity : 48 positions (+ AUX position "AU")
Channel coverage : VHF band I : CH 0 – 5
VHF band III : CH 5A – 11
UHF band IV/V : CH 28 – 69
Aerial output : VHF channel 0 or 1 of Australian channel system (switchable, preset to channel 1 when shipped.)

TIMER

Clock reference : Quartz-crystal
Programme capacity : 1-year/8-programme timer
Memory backup time : Minimum 3 min.

ACCESSORIES

Provided accessories : Aerial cable
Infrared remote control unit
"R6" battery x 2
Audio/Video cable
Optional accessories : VPT adapter VU-V140E
RGB signal converter KM-V7EG

Specifications shown are for SP mode unless otherwise specified.
Design and specifications subject to change without notice.

In Case Of Difficulties

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the recorder.	■ Is the power cord disconnected? — Connect it.
Clock is functioning properly, but the recorder cannot be powered.	■ Is "TIMER" displayed on the display panel? — Press the TIMER button to extinguish the display.
Tape does not run during recording.	■ Is "PAUSE" displayed on the display panel? — Press the PLAY button to extinguish the display.
Tape stops during rewind or fast-forward.	■ Is the C. MEMORY button pressed? — Press again to make "M" disappear from the display panel.
Tape will not rewind or fast-forward.	■ Is the tape already fully rewound or fast-forwarded? — Check the cassette.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	■ Is a cassette loaded? ■ Is the safety tab on the cassette removed? — Reseal the slot with adhesive tape.
TV broadcasts cannot be recorded.	■ Has "external input" been selected? — Set to the desired channel.
Tape-to-tape editing is not possible.	■ Is the camcorder or another video recorder correctly connected? ■ Are all necessary power switches turned ON? ■ Has "external input" been selected? — Set to the correct input mode. (☞ p.41)
Camera recording is not possible.	■ Is the camcorder correctly connected? ■ Has "external input" been selected? — Set to the correct input mode. (☞ p.41)
Timer recording is not possible.	■ Have you set the clock correctly and programmed the timer correctly? — Check once again. ■ Is "TIMER" displayed on the display panel? — If not, press the TIMER button to display "TIMER".

PLAYBACK PROBLEMS

Symptoms	Check points
Playback picture does not appear while the tape is running.	■ If you are using RF OUT connection, is the TV receiver's channel selector set to the correct video channel? — Set it to the RF converter channel. (☞p.9) ■ If you are using AV connection, is the TV receiver set to the AV mode? — Set it to the AV mode.
Playback is repeated.	■ Is the REPEAT switch set to either FULL or INDEX? — Set it to OFF.
Noise appears during visual search.	■ This is normal.
Noise appears during normal playback.	■ Is the automatic tracking mode engaged? — Try manual tracking. (☞p.22)
Noise appears during slow motion playback.	— Try manual tracking. (☞p.22)
Noise appears during still playback.	— Press Pause/Still a few times to remove the noise bars from the screen.
Playback picture is blurred or interrupted while TV broadcasts are clear.	■ Video heads may be dirty. — Head cleaning is necessary. Consult your JVC dealer. (☞p.49)

Hi-Fi AUDIO PROBLEMS

Symptoms	Check points
TV sound cannot be recorded on Hi-Fi audio track.	■ Has the SIMUL button been pressed? — Check by pressing OSD. If "SIMUL" appears on the screen, cancel it by pressing SIMUL button.
Breaks are noticeable in Hi-Fi audio reproduction.	■ Is the automatic tracking mode engaged? — Try manual tracking. (☞p.22)

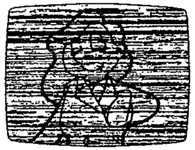
OTHERS

Symptoms	Check points
Whistling or howling is heard from TV during camera recording.	■ Move camcorder or camera's microphone away from TV or reduce TV sound volume.
Remote control's LCD clock time cannot be transferred to the recorder.	■ Is "TIMER" displayed on the display panel? — Press the TIMER button to extinguish the display.
Some channels are skipped over when scanning channels.	■ Those channels are preset to be skipped over. If you need them, restore them. (☞p.42)
Channel cannot be switched.	■ Is recording in progress? — Press the PAUSE/STILL button, change the channel, and press the PLAY button.
Remote control does not function.	■ Are the batteries discharged? — Replace with new ones. ■ Is the A/B CODE indicator showing the proper code for the recorder being operated? — Set the A/B CODE switch to the correct setting.
The remote control's time display changed to "0:00" and is blinking.	— The remote control's batteries are exhausted. Replace all the batteries and set the clock again.
"Snowy picture" on screen when viewing TV programmes while recording another programme.	■ Is the VIDEO indicator lit on the FDP? — Press the TV/VIDEO button so that the indicator extinguishes.

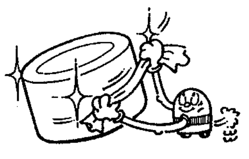
ATTENTION:
This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch on. Take out the cassette. After checking the cassette, operate the unit as usual.

Special Note On Head Cleaning

Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted.
Although this model is equipped with a built-in head cleaner which automatically cleans the heads, reducing the likelihood of dirty heads, if such troubles are encountered please consult the nearest JVC dealer.



Auto Head Cleaner



A built-in head cleaner automatically cleans the video heads and head drum whenever a tape is loaded or unloaded to reduce head clogging.

SECTION 1
DISASSEMBLY AND MECHANISM ADJUSTMENT

1.1 DISASSEMBLY

1.1.1 Top cover

1. Take out 4 screws Ⓐ.
2. To remove the top cover, slide in direction of arrow and lift away.

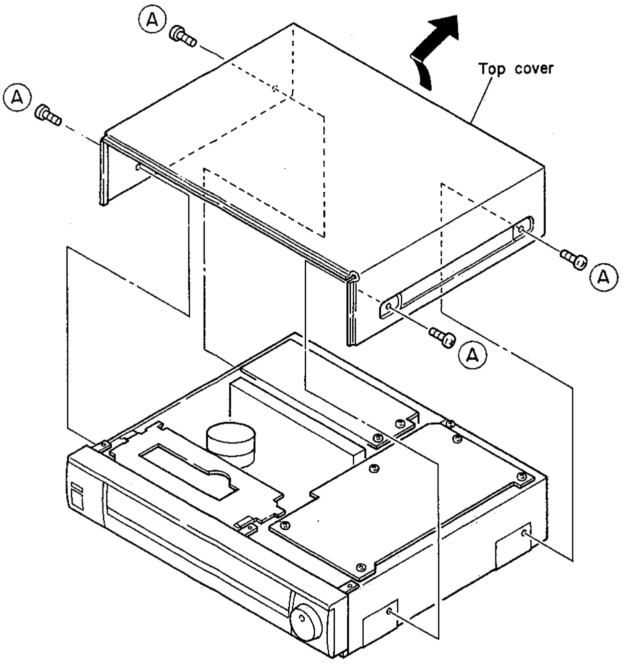


Fig. 1-1-1 Top cover

1.1.2 Front panel assembly

1. Remove the top cover.
2. Take out 3 screws Ⓙ, then remove the plate.
3. Carefully disengage 3 tabs ⓐ of the front panel assembly from the upper side of chassis.
4. Pull the front panel assembly forward you to disengage 3 tabs ⓑ of the front panel assembly from the bottom of the chassis.

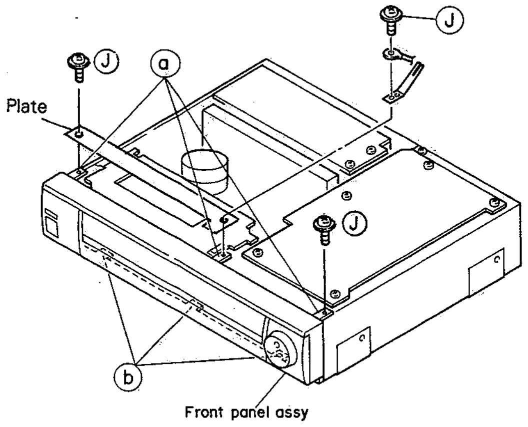

Ⓙ
Ⓙ
ⓐ
Plate
Ⓙ
ⓑ
Front panel assy

Fig. 1-1-2 Front panel assembly -1

4. Take out 11 screws Ⓑ, and disconnect connector Ⓒ from the Display board assembly.

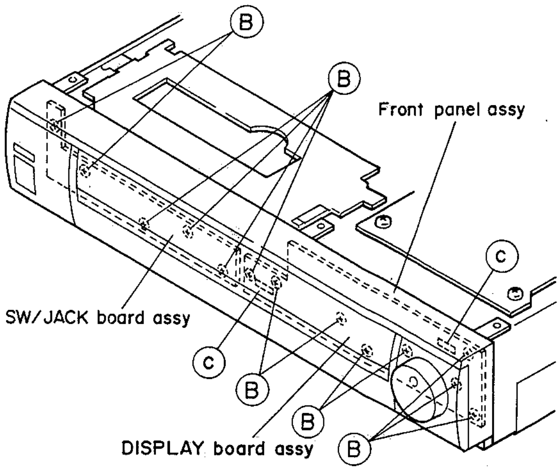

Ⓑ
Ⓑ
Front panel assy
Ⓒ
SW/JACK board assy
Ⓒ
Ⓑ
Ⓑ
DISPLAY board assy
Ⓑ

Fig. 1-1-3 Front panel assembly -2

1.1.3 Bottom cover

1. Remove the top cover.
2. Take out 9 screws Ⓒ.

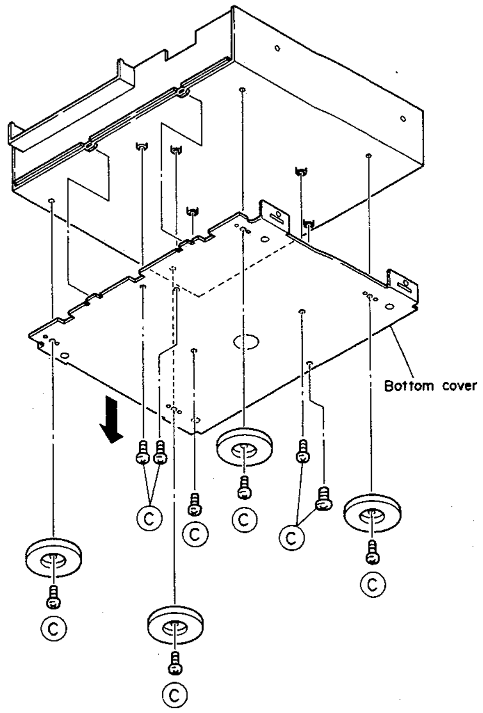

Bottom cover
Ⓒ
Ⓒ
Ⓒ
Ⓒ
Ⓒ
Ⓒ
Ⓒ

Fig. 1-1-4 Bottom cover

1.1.4 Video interface board assembly

1. Remove the top cover.
2. Take out 7 screws Ⓓ and 3 screws Ⓔ
3. Disconnect 3 connectors ⓐ.
4. Remove the main board assembly in the direction of arrow.

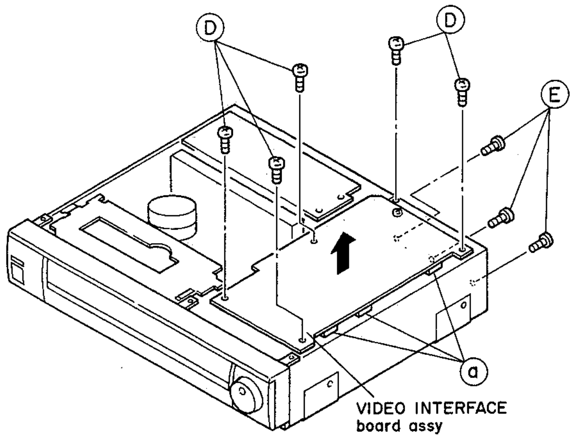

D
D
E
a
VIDEO INTERFACE
board assy

Fig. 1-1-5 VIDEO INTERFACE board assembly

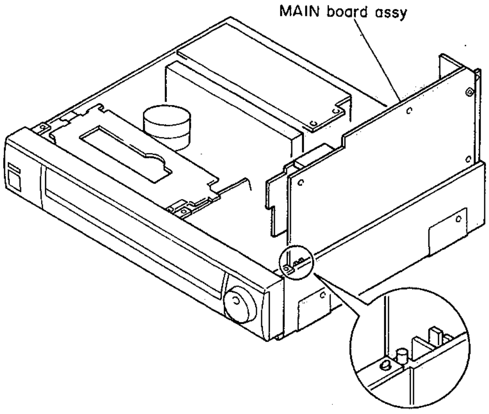

MAIN board assy

Fig. 1-1-6 Service portion

1.1.5 Cassette housing assembly

1. Remove the top cover and main board assembly.
2. Carefully disengage 3 tabs ⓐ of the front panel assembly from the upper side of the chassis.
3. Pull the front panel assembly forward you to disengage 3 tabs ⓑ of the front panel assembly from the bottom of the chassis.
4. Take out 4 screws Ⓕ.
5. Remove the cassette housing assembly in direction of arrow.

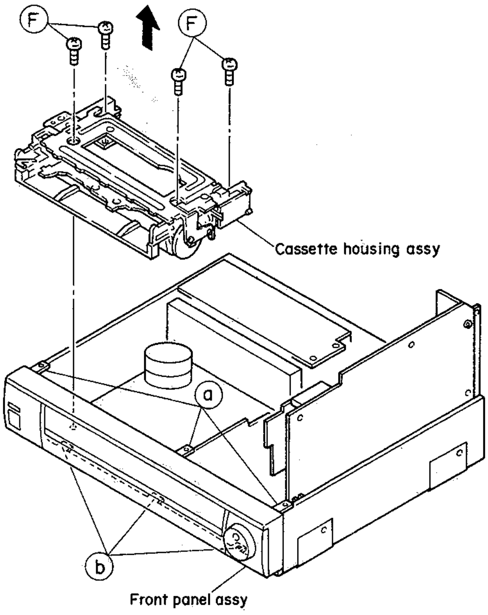

F
F
Cassette housing assy
a
b
Front panel assy

Fig. 1-1-7 Cassette housing assembly

1.1.6 Cassette housing installation

Note: ***Observe the mechanical phase and position (see figure) when installing the cassette housing assembly. If these are incorrect, the system will not operate properly even when tape is inserted.***

1. Check that the marks of the control cam and pinch roller cam are aligned. If necessary, turn the worm clutch by hand to adjust the position.

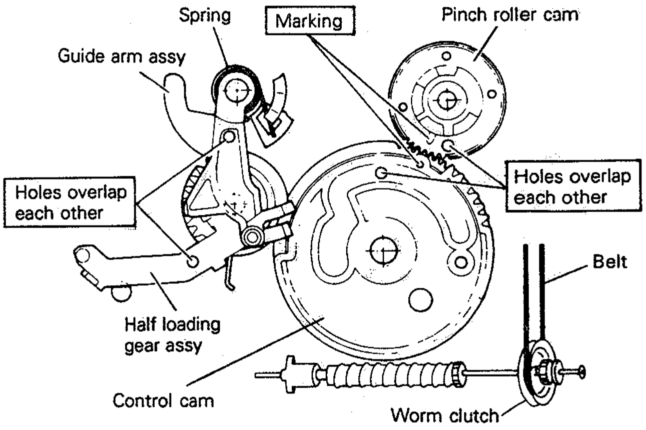

Spring
Marking
Pinch roller cam
Guide arm assy
Holes overlap each other
Holes overlap each other
Belt
Half loading gear assy
Control cam
Worm clutch

Fig. 1-1-8 Control cam and pinch roller cam position

2. Confirm that the clutch of the worm clutch assembly is locked. If necessary, engage the locked.

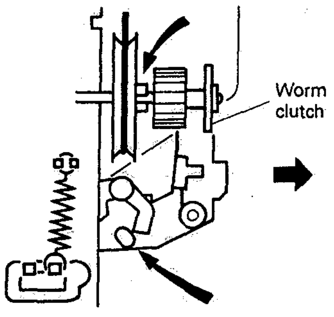

Worm clutch

Fig. 1-1-9(a) Not locked

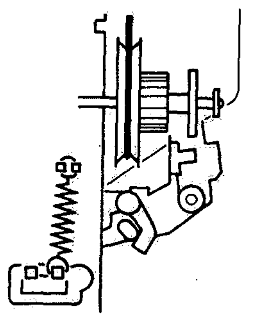


Fig. 1-1-9(b) Lock engaged

3. Install the front panel as shown in Fig. 1-1-10 and reengage the tabs. Supply power and use a spare cassette to check for normal loading and eject operations

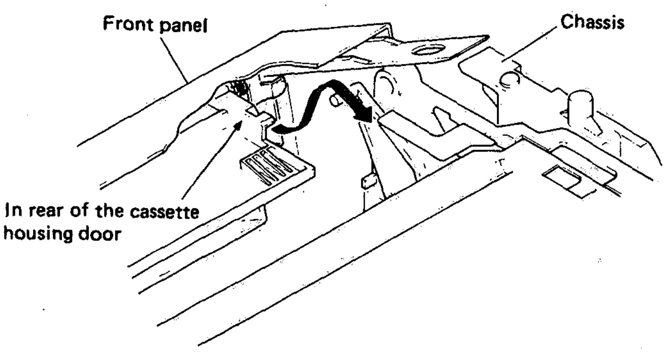

Front panel
Chassis
In rear of the cassette housing door

Fig. 1-1-10 Cassette housing door

1.1.7 Switching regulator assembly

1. Remove the top cover and main board assembly.
2. Take out 4 screws Ⓓ .
3. Disconnect 7 connectors ⓓ from the switching regulator board assembly.
4. Remove the switching regulator board assembly in direction of arrow.

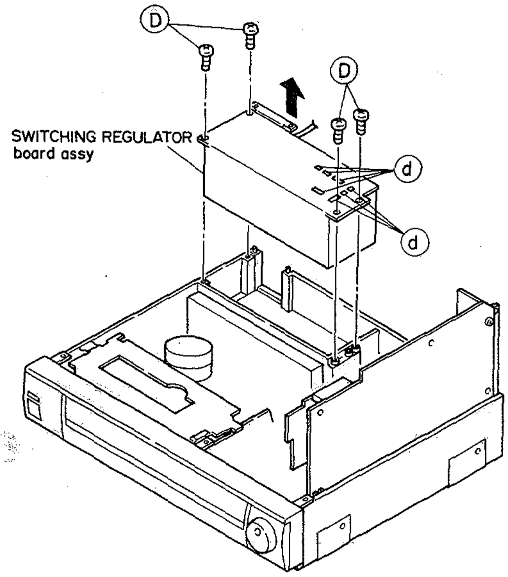

Ⓓ
Ⓓ
SWITCHING REGULATOR board assy
ⓓ
ⓓ

Fig. 1-1-11 Switching regulator assembly

1.1.8 Rec amp board assembly

1. Remove the top cover and main board assembly.
2. Disconnect 5 connectors ⓔ from the pre amp board assembly.
3. Take out 2 screws Ⓖ and remove the pre amp board assembly in direction of arrow.

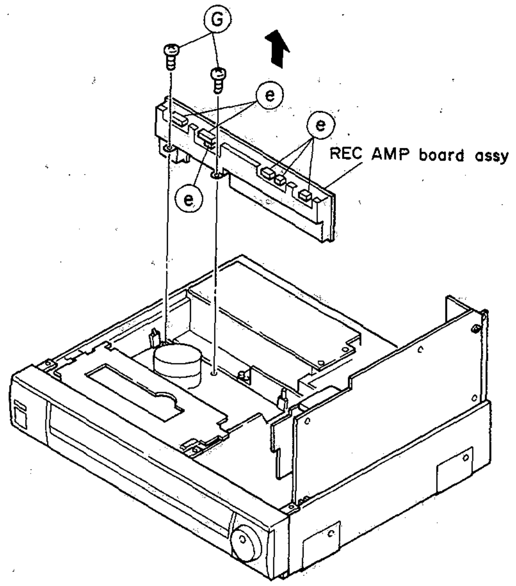

Ⓖ
ⓔ
ⓔ
REC AMP board assy
ⓔ

Fig. 1-1-12 Rec amp board assembly

1.1.9 Main deck assembly

1. Remove the top cover, front panel, main board assembly and cassette housing assembly.
2. Take out 3 screw Ⓗ and disengage 2 claws ⓕ from the chassis.
3. Remove the main deck assembly in direction of arrow.

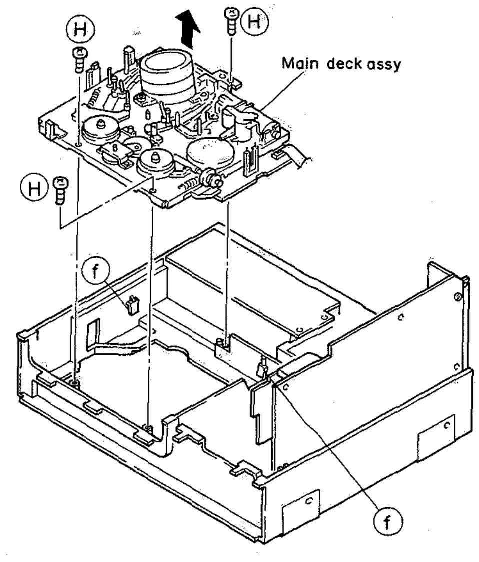

Ⓗ
Ⓗ
Main deck assy
Ⓗ
ⓕ
ⓕ

Fig. 1-1-13 Main deck assembly

1.2 MECHANISM ADJUSTMENTS

1.2.1 Precautions

1. Disconnect VCR from AC power before soldering.
2. Avoid imparting stress to wires when disengaging connectors.
3. Determine and correct the cause of difficulty before proceeding to adjustments. Do not disturb settings unnecessarily.
4. Use care not to damage tabs, claws, etc. during repairs.
5. Install the cassette housing assembly only when the mechanism is in the Eject or Stop mode position. In the Eject mode, the internal holder of the housing is fully raised. This is fully lowered in the Stop mode.
6. When installing the front panel assembly, be sure to engage the housing door with the door lever of the cassette housing assembly. If this is omitted, the door will not open at Eject and the cassette cannot be removed.

1.2.2 Check without cassette housing

Mechanism operations can be observed easily by removing the cassette housing assembly. Note the following.

1. Disable the photo transistor sensor (END SENSOR) on the main-deck by applying an opaque cover.
2. Connect pins 2 and 3 of A/S/M board connector CN601.
3. Select the desired modes with the operation buttons. However, notice that without tape, setting for the reverse direction modes produces the Stop mode after a few seconds due to absence of the reel sensor output.

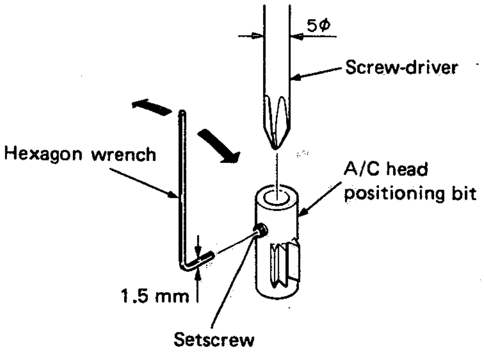


Fig. 1-2-1 A/C head positioning tool

1.2.3 Manually removing cassette tape

In event of electrical system failure that prevents the tape from being unloaded, the tape can be removed manually by the following procedure. Refer to Figs. 1-3-1, 1-3-2 and 1-3-3.

1. Disconnect power cord from AC outlet.
2. Turn the loading motor by hand so that the control cam rotates clockwise. This retracts the pole base assembly to the unloading position.
3. Continue turning to where the guide arm and half loading gear assemblies shift to beneath the cassette.
4. Turn the clutch assembly at the rear of the deck to absorb slack tape within the cassette.
5. Again turn the loading motor in the same direction to raise the cassette and remove it.

1.2.4 Test equipment

The following special tools and fixtures are required for mechanism adjustment.

1. Alignment tapes : MH-2 and MH-2L
   Stairstep signal is employed for interchangeability checks and adjustments.
2. Torque gauge : PUJ48075-2
   Measures tape take-up torque.
3. Back tension cassette gauge : PUJ48076-2
   Measures tape tension at the supply side.
4. A/C head positioning bit : PTU94010
   - Shifts the head base for adjusting the control head position.
   - **The installation of a A/C head positioning bit on the screw-driver.**
     Refer to Fig. 1-2-1. Set screw-driver into the A/C head positioning bit where it does not interfere with adjusting the A/C head adjusting boss (position the screw-driver point 6 ± 2 mm from point of the A/C head positioning bit). Slightly tighten the setscrew by hexagon-wrench (1.5 mm).
5. Roller driver : PTU94002
   Turns the guide roller for adjusting FM linearity.
6. Presetting unit: PTU94008
   Use for LP auto tracking preset adjustment.

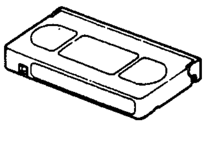
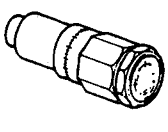
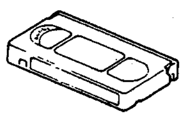
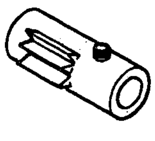
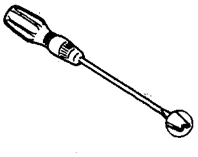
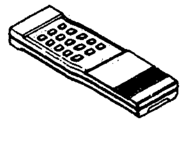
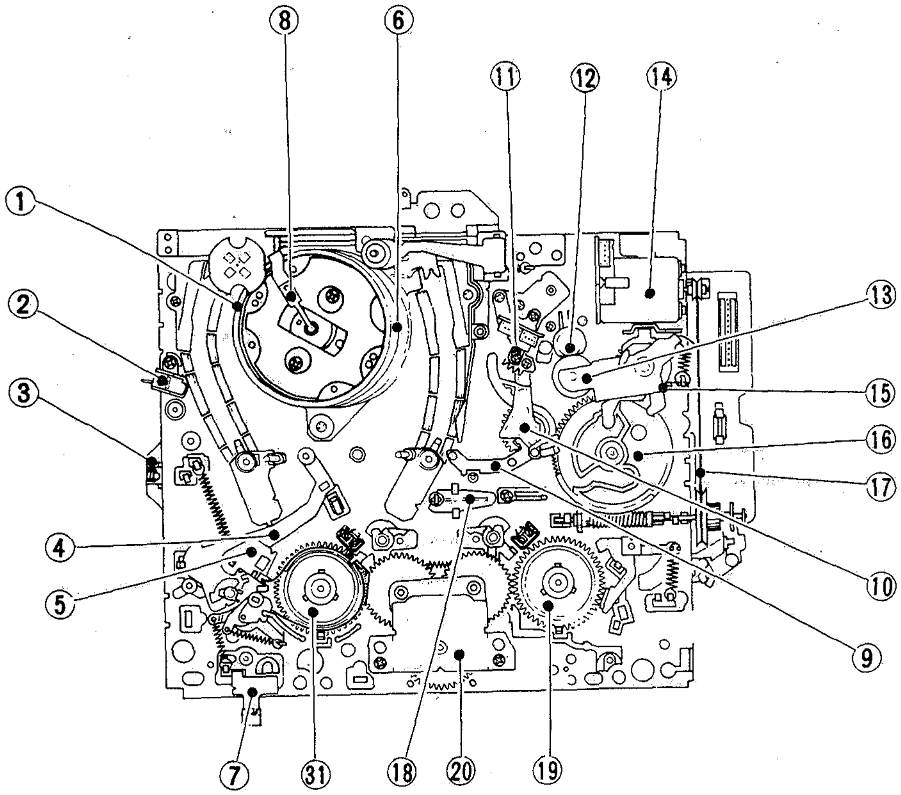
1 Alignment tapes	2 Torque gauge	3 Back tension cassette gauge	4 A/C head positioning bit	5 Roller driver	6 Presetting unit
					

Fig. 1-2-2 Test equipment

1.3 MAIN MECHANISM PARTS


⑧
⑥
⑪
⑫
⑭
①
⑬
②
⑮
③
⑯
⑰
④
⑩
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㉛
⑱
⑳
⑲

Fig. 1-3-1 Top view of main-deck

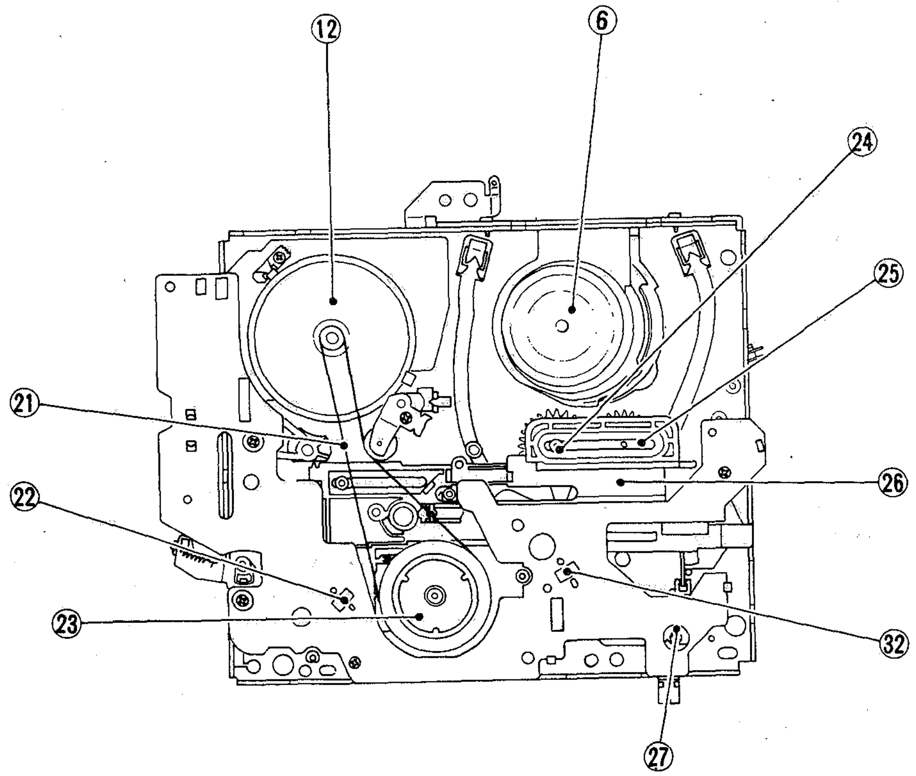
⑫
⑥
㉔
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Fig. 1-3-2 Bottom view of main-deck

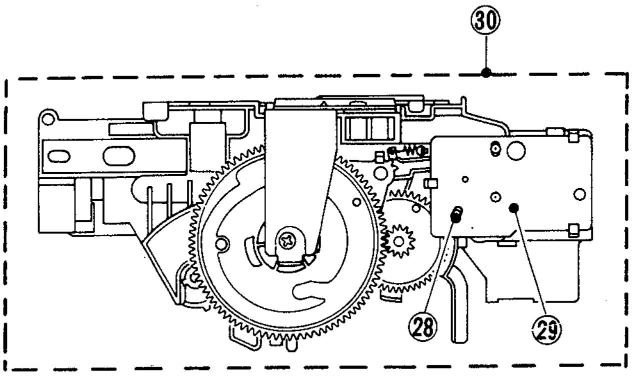


Fig. 1-3-3 Side view of cassette housing

A. Cleaning

Periodic cleaning of the tape transport system is desirable, but ordinarily not feasible in practice. Therefore, perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads, tape guides and brushes can detract from playback picture quality and in extreme cases, even damage the tape. For cleaning, use a fine-mesh cotton cloth (about the texture of a white dress-shirt) moistened in alcohol.

- To clean the video heads, press the moistened cloth gently against the upper drum with fingertip and turn the drum by hand.
- Do not use a vertical stroke, as this may damage the heads.

B. Lubrication

Oil and grease do not normally require periodic replenshing. Apply only when replacing lubricated parts (also clean and replace lubrication of mating parts if soiled).

For parts and points to apply oil and grease, refer to the exploded views of the mechanism assembly.

Before oiling, clean with alcohol.
Apply one or two drops of oil. Avoid excess oil.

1. Table 1-3-1 indicates the oil and grease used in this set. Use these or recommended locally available equivalents:

Category	Part No.
Oil	COSMO-HV56
Grease	KANTO-G-31KAV

Table1-3-1

2. Grease is not required for a replacement cassette housing assembly, as this has been applied at the factory.

Note: *Stir grease that has been stored for an extended period.*

C. Main mechanical parts

See Fig.s 1-3-1, 1-3-2 and 1-3-3.

No.	Symbol	Parts Name	See Section
1	M32A	Upper drum assy	1.5.1
2	M44	Full erase head	
3	51Q1	End sensor	
4	M41	Tension arm assy	1.5.4
5	M42	Tension band assy	1.5.4
6	M32C	Lower drum motor assy	1.5.2
7	M461	REC safety switch	
8	M32D	Brush assy	
9	M449	Half loading gear assy	1.5.5
10	M447	Guide arm assy	1.5.5
11	M48	A/C head	1.5.3
12	M422	Capstan motor	
13	M442	Pinch roller arm assy	
14	M434	Loading (Mode) motor assy	
15	M446	Pinch roller cam	1.5.5
16	M438	Control cam	1.5.5
17	M437	Loading belt	
18	M460	LED holder (D1)	
19	M430	Reel disk (take-up)	
20	M424	Idler gear unit	
21	M429	Timing belt	
22	51PS1	Take up reel sensor (PHS1)	
23	M426	Clutch unit	1.5.6
24	M433	Take up loading arm assy	1.5.7
25	M432	Supply loading arm assy	1.5.7
26	M439	Plate assy	1.5.7
27	M462	Slide encoder (S3)	
28	56PHS3	Cassette sensor (PHS3)	
29	56Q2	Start sensor (Q2)	
30	M36	Cassette housing assy	
31	M470	Reel disk (supply)	

- Symbol interpretation example

M32A
M32: Exploded view symbol
A: Ref. No.

56 Q2
56: Board No.
Q2: Ref. No.

1.4 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage. Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced at when required.

1.4.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary.

Also note that rubber parts may deform in time, even if the set is not used.

System	No.	Parts Name	Symbol No.	Periodic servicing schedule (operation hours)							
				250	500	750	1000	1250	1500	1750	2000
Tape Transport	1	Upper drum assy	M32A	★	★	☆	○	○	○	○	○
	11	A/C head	M48	★	★	★	○	○	○	○	○
	13	Pinch roller arm assy	M442	★	★	★	○	○	○	○	○
	2	Full erase head	M44	★	★	★	○	○	○	○	○
	4	Tension arm assy	M41								
	6	Lower drum motor assy	M32C				○	○	○	○	○
	12	Capstan motor	M422	★	★	★	★	★	★	★	★
	9	Half loading gear assy	M449								
	10	Guide arm assy	M447								
Drive	12	Capstan motor	M422				○	○	○	○	○
	17	Loading Belt	M437				○	○	○	○	○
	21	Timing Belt	M429				○	○	○	○	○
	19	Take-up reel disk	M430				○	○	○	○	○
	31	Supply reel disk	M470				○	○	○	○	○
	23	Clutch unit assy	M426								○
	14	Loading motor assy	M434				○	○	○	○	○
		Worm clutch assy	M436								△
	26	Plate assy	M439								△
Others	5	Tension band assy	M42				○				○
	8	Brush assy	M32D				○				○

★ : Cleaning

☆ : Cleaning (or Replacement if necessary)

△ : Lubrication

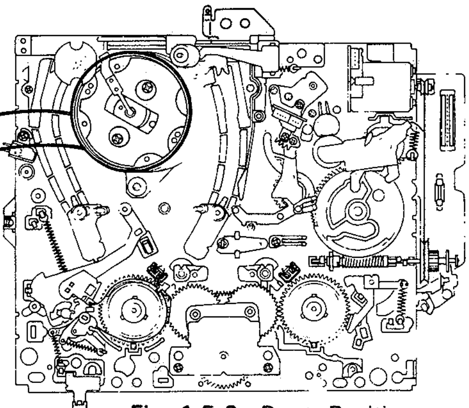
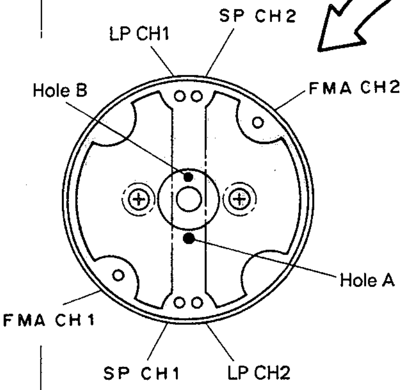
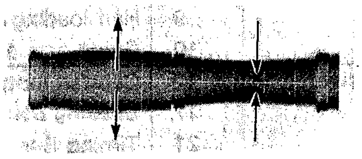
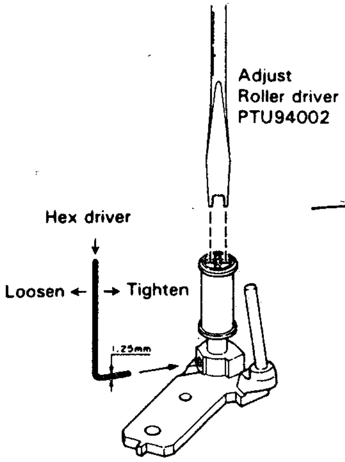
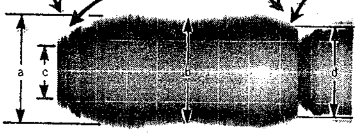
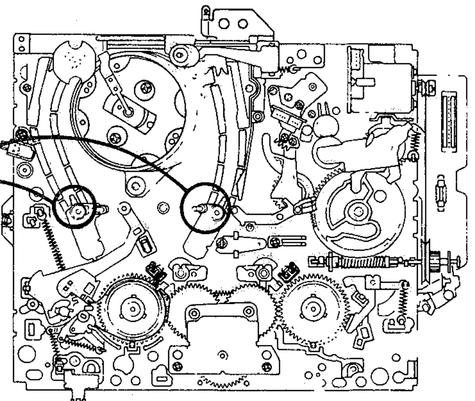
No: Refer to Main mechanical parts

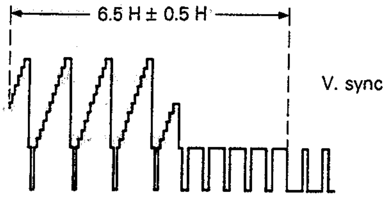
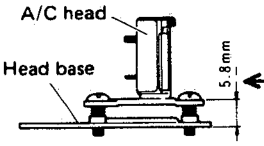
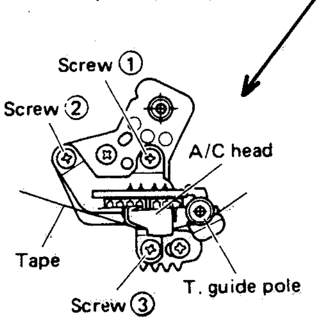
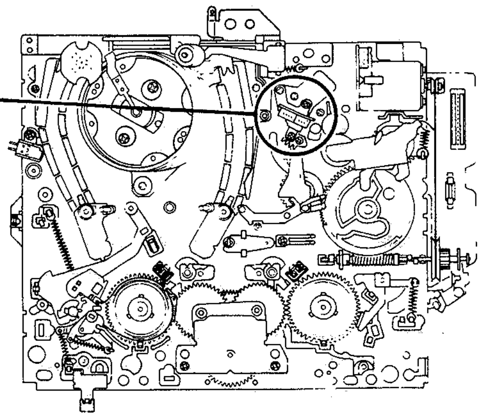
▲ : Lubrication (or Replacement if necessary)

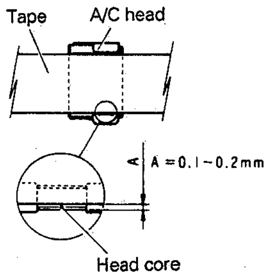
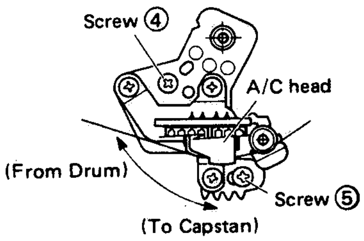
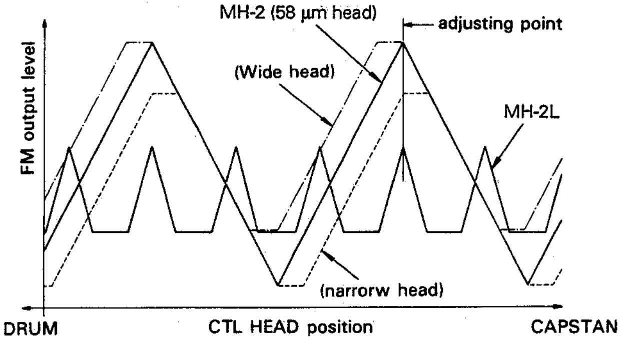
◎ : Inspection or Replacement if necessary

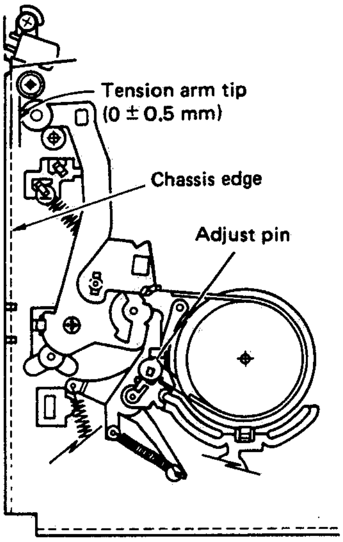
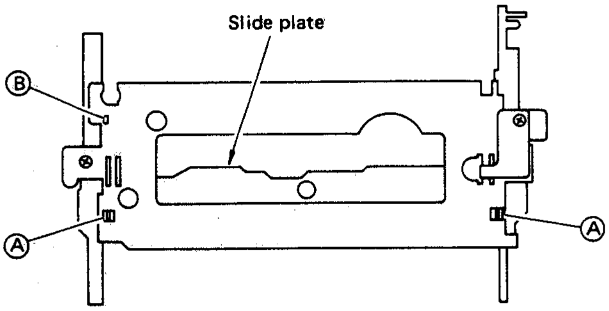
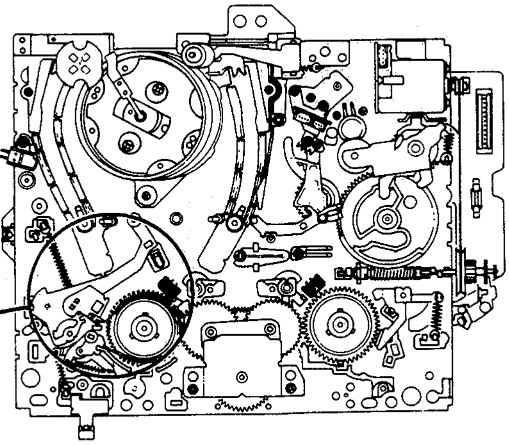
Table 1-4-1 Approximate maintenance schedule

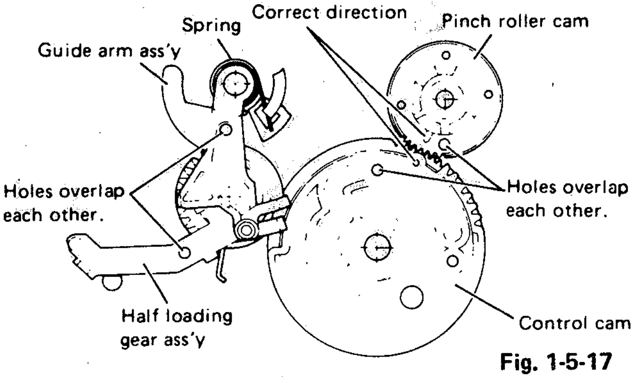
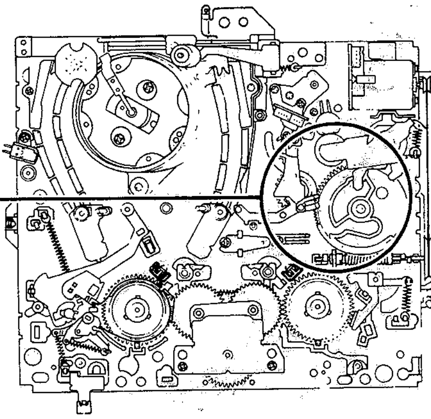
1.5 MAIN PARTS REMOVAL AND REPLACEMENT

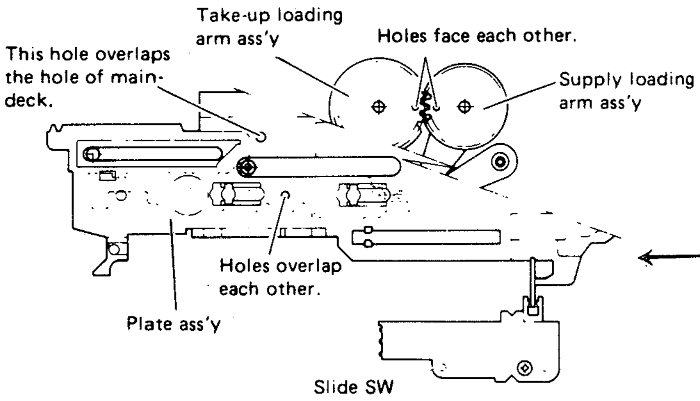
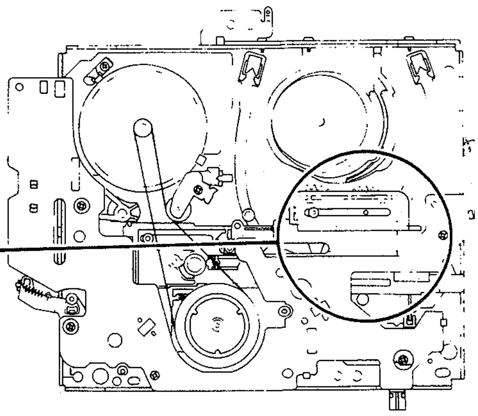
No.	Item	Checkpoints	Adjustment and Checks
1	Upper drum assembly •Symptoms: FM signal absent, intermittent or weak on one channel; large difference in channel output levels •Cause: Worn or damaged video heads, poor response, etc.	 **Fig. 1-5-2** Drum Position	
	 LP CH1 SP CH2 Hole B FMA CH2 Hole A FMA CH1 SP CH1 LP CH2 **Fig. 1-5-1** DRUM TOP VIEW	Mounting direction See Fig. 1-5-1. (Symptom: no picture)	After replacing, observe that upper drum hole A is opposite the motor axis from lower drum hole B.
		Axis wobble See Fig. 1-5-2. (Symptom: jitter, poor FM linearity) PB FM: REC AMP board TP53 FF: VIDEO INTERFACE board TP411	Record and playback in LP mode. Confirm absence of large difference between channels. (Fig. 1-5-3)  **Fig. 1-5-3** Axis wobble
	 Adjust Roller driver PTU94002 Hex driver Loosen Tighten 1.25mm **Fig. 1-5-4** S.T. Pole base	FM linearity check See Fig. 1-5-5. (Symptom: vertical sync absent, picture noise) PB FM: REC AMP board TP53 FF: VIDEO INTERFACE board TP411  **Fig. 1-5-5** FM linearity $\frac{b}{a} \geqq 0.7, \frac{c}{a} \geqq 0.65, \frac{d}{a} \geqq 0.65$	 **Fig. 1-5-6** S.T. Pole base position 1) Play stairstep signal of the MH-2 Alignment Tape. Confirm absence of obvious FM waveform loss and that operating the Tracking yields the optimum point. 2) Refer to Fig. 1-5-4, adjust for loss at the left edge (drum entry) of the FM waveform by turning the guide roller of the supply pole base. Similarly, adjust for loss at the right edge (drum exit) by turning the guide roller of the take-up pole base. **Note:** ***If FM loss occurs on both channels and cannot be corrected by adjusting the guide rollers, the lower drum needs replacement.***

No.	Item	Checkpoints	Adjustment and Checks
	PB switching point •Symptom: switching noise at picture bottom.  **Fig. 1-5-7** PB Switching Point	VIDEO OUT or TP10 (VIDEO INTERFACE board)	1) Connect VCR to AC. Turn power on. 2) Connect an oscilloscope to VIDEO OUT or TP 10. 3) Insert the MH-2 alignment tape to the cassette housing. Play back the stairstep segment of MH-2 alignment tape. 4) Trigger the oscilloscope externally (− slope) with the signal from TP411 (DRUM FF) of the VIDEO INTERFACE board. 5) Adjust by pressing E(−) or F(+) buttons of presetting unit for position the trigger point 6.5 H ± 0.5 H from V. sync as shown in Fig. 1-5-7.
2	Lower drum assembly •Symptoms: Poor FM linearity, noisy rotation, jitter •Cause: Lead and bearing wear	Check FM linearity and switching point.	See above upper drum assembly items.
		Check control head phase (X value) Symptom: tracking error PB FM: REC AMP board TP53 FF: VIDEO INTERFACE board TP411	1) Play stairstep signals of MH-2 and MH-2L Alignment Tapes. Engage the Tracking Preset mode by pressing the V and Λ buttons simultaneously in the onscreen mode. Confirm that the same maximum FM waveform level is obtained as when the tracking is adjusted manually. 2) Refer to the A/C head adjustments.
3	**A/C head**  **Fig. 1-5-8** Temporary height  Screw ① Screw ② A/C head Tape T. guide pole Screw ③ **Fig. 1-5-9** Inclination/Azimuth/Height adj.		 **Fig. 1-5-10** A/C HEAD position
		Temporarily set height as indicated in Fig. 1-5-8.	Set the height as indicated in Fig. 1-5-8 to facilitate tape transport checks and adjustments.
		Tilt (forward inclination) See Fig. 1-5-9. (Symptom: audio level varies greatly.)	1) Run tape, turn screw ① counterclockwise to where slight curling of the tape occurs at the lower flange of the take-up guide roller. 2) Then slowly turn the screw clockwise to where the curling ceases.
		Azimuth See Fig. 1-5-9. (Symptoms: audio low level or noisy) Audio output: AUDIO OUT	1) Set front panel AUDIO MONITOR selector to Normal and play stairstep signal (with audio 6 kHz) of the MH-2 Alignment Tape. Observe audio output signal with oscilloscope. 2) Turn screw ② and adjust for maximum audio output level.

No.	Item	Checkpoints	Adjustment and Checks
	 **Fig. 1-5-11** Height Adj	Height See Figs. 1-5-9 and 1-5-11. (Symptom: low audio and control signal levels)	1) Run tape and observe the control head area. 2) Turn screws ①, ② and ③ by small and equal amounts until 0.1 to 0.2 mm of the head core bottom can be seen. **Note:** ***If difficult to observe, play stairstep signal of MH-2 Alignment Tape and adjust for maximum audio output and control pulse level.***
		FM linearity	Refer to upper drum assembly items. If adjustment is major, again check the azimuth.
	 Screw ④ A/C head (From Drum) Screw ⑤ (To Capstan) **Fig. 1-5-12** CTL head phase  **Fig. 1-5-13** CTL head phase **Note:** ***Trigger the oscilloscope externally signal from TP411 (DRUM FF). Use (+) trigger for MH-2 and MH-2L alignment tape. Narrow head is employed for this model.***	Control head phase See Fig. 1-5-12 PB FM: REC AMP board TP53 FF: VIDEO INTERFACE board TP411	1) Play stairstep signal of MH-2 Alignment Tape and observe the FM waveform. Set for Tracking Preset by pressing the V and Λ buttons simultaneously in the onscreen mode. 2) Loosen screws ④ and⑤. Set the A/C head positioning tool on screw ④, with the stud inserted into the nearby oblong hole. 3) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig. 1-5-13. 4) Tighten screw ⑤ . Remove the tool and tighten screw ④. 5) Play stairstep signal of MH-2L Alignment Tape and confirm maximum FM waveform output level as shown in Fig. 1-5-13. 6) If not maximum, slightly loosen screws ④ and ⑤. Use the tool and adjust the head position for the nearest maximum point. Then tighten screws ④ and ⑤.
		LP auto tracking adjustment	1) Terminate the video output at 75 ohms with a monitor-TV and connect oscilloscope to PB FM (TP53). 2) Set MH-2L Alignment Tape into the cassette housing and play the stairstep signal. 3) Confirm that the A/V digital tracking LED changes from flashing to lighted. 4) Press button "D" of the preset unit (PTU 94008) to extinguish the A/V digital tracking LED. 5) Again press button "D" to enter the LP interchangeability adjust mode. Confirm that the A/V digital tracking LED changes from flashing to extinguished. Press the stop button. **Note:** ***If the Alignment Tape ejects automatically, repeat the control head phase adjustment.***

No.	Item	Checkpoints	Adjustment and Checks
4	**Tension arm assembly** **Tension band assembly**  Tension arm tip (0 ± 0.5 mm) Chassis edge Adjust pin **Fig. 1-5-14** Tension arm assy  **Fig. 1-5-16** Cassette housing	**Tension pole position** See Fig. 1-5-14. **(Symptom: poor FM waveform response)**	 **Fig. 1-5-15** Tension arm position 1) Remove video cassette tape and set for the playback mode as following steps. 2) Disconnect VCR from AC. Slightly rotates the loading motor counterclockwise by hand, then press the lock level portion Ⓐ of the cassette housing by hand as shown in Fig. 1-5-16. 3) Move the raised portion of the cassette housing slide plate to fully forward by hand with loading motor. At this time, again press the lock level portion Ⓑ of the cassette housing slide plate to lower the cassette housing (internal holder of the cassette housing is locked in lowered position). 4) Cover the cassette LED with opaque material (insulated tape with black). 5) Connect VCR to AC. Press the power button on the Front panel and set for the playback mode. 6) Turn the eccentric adjust pin to align the edge of the chassis with the tension arm tip as shown in Fig. 1-5-14.
		Back tension **(Symptom: skew)**	**1) When the tension pole position is correctly adjusted, the back tension will assume the correct value.** **2) Use the Back Tension Cassette Gauge and set for the playback mode. Confirm reading of 35 to 48 g·cm.** **3) Changing the tension pole position in order to vary the back tension will cause adverse effects elsewhere.**

No.	Item	Checkpoints	Adjustment and Checks
5	Pinch roller cam Control cam Half loading gear assembly Guide arm assembly  Correct direction Spring Pinch roller cam Guide arm ass'y Holes overlap each other. Holes overlap each other. Half loading gear ass'y Control cam **Fig. 1-5-17** Control/Pinch roller cam		Set mechanism to Eject mode internal holder of the cassette housing is locked in raised) position.
		Important: Do not remove or disturb parts other than those mentioned. See Fig. 1-5-17.	 **Fig. 1-5-18** Control cam position 1) When installing the pinch roller cam, overlap the largest hole of the gear portion with the hole of the deck. 2) Set the control cam on the deck with the hole of the groove overlapped with the hole of the deck. Observe that the small hole of the control cam and the ridge of the pinch roller cam are aligned. (If the control cam does not fit readily, shift the rear plate assembly within the range of play.) 3) Install the half loading gear assembly with the hole overlapped with the hole of the deck. Secure with E-ring. 4) Install the guide assembly over the spring and with the hole overlapping that of the deck. Engage the spring correctly.
		Cassette housing assembly	Install the cassette housing assembly with the mechanism in the Eject mode. Also observe that the inner holder of the housing is raised and locked.
6	Clutch assembly	Take-up torque (Symptom: inadequate take-up torque)	1) Remove cassette housing and set for playback mode (see Section 1.2). 2) Set torque gauge on the take-up reel disk. Gradually relax your grip on the gauge and read the needle indication at the point the gauge begins to rotate with the disk. Confirm indication of 60 to 100 g·cm.

No.	Item	Checkpoints	Adjustment and Checks
7	Take-up loading arm assembly Supply loading arm assembly Plate assembly		**Note:** • *Set mechanism to the Eject or Stop mode before removing these parts.* • *The flange of the plastic rivet securing the loading arm assembly and the pole base assembly can be damaged by attempting to remove it directly. Press the loading arm assembly firmly to prevent motion. Then use a narrow-shafted tool to press the rivet from the shaft end to remove it.*
		Mounting position alignment • Remove the tension arm assembly to facilitate operation. See Fig. 1-5-19.	1) Set the supply and take-up loading arm assemblies so that the holes of the gear portions are aligned, then secure to the pole base assemblies with rivets. 2) Shift the plate assembly and install with the holes of the upper and lower components overlapped.
		Slide switch See Fig. 1-5-19.	Be sure to engage the slide switch slider with the edge of the plate assembly.
	 Take-up loading arm ass'y This hole overlaps the hole of main-deck. Holes face each other. Supply loading arm ass'y Holes overlap each other. Plate ass'y Slide SW **Fig. 1-5-19**		 **Fig. 1-5-20** T.S. Loading arm position

1.6 DIGITAL TRACKING OFF/ON SETTING

Set the tracking of the Front panel of the digital tracking off/on position by simultaneously pressing the "Λ" and "V" channel (tracking) buttons during playback mode. Observe the display on a monitor-TV and adjust for optimum noise condition (best tracking) by depressing "V" or "Λ" channel buttons during playback mode for digital tracking off.

SECTION 2
ELECTRICAL ADJUSTMENT

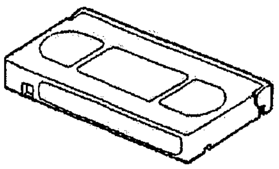
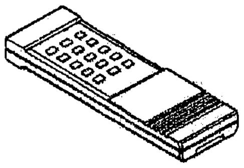
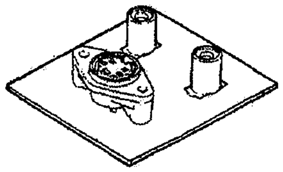
2.1 Precaution

Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipments is available.

2.1.1 Required test equipment

1. Colour television monitor.
2. Osciloscope: wide-band, dual-trace, triggered delayed sweep
3. Frequency counter
4. Audio oscillator
5. Audio voltmeter
6. Digital voltmeter
7. Signal generator: RF/IF sweep/marker
8. Signal generator: PAL colour bar, stairstep
9. Distortion meter
10. Recording tape

2.1.2 Required adjustment tools

Alignment tape (SP) MH-2	Presetting unit PTU94008
	
RCA-S Adapter PTU93001A	*SMC replacement tools YTU94038C
	

***NOTE:** *It is convenient for replacing chip parts.*

2.1.3 Colour bar signal and pattern

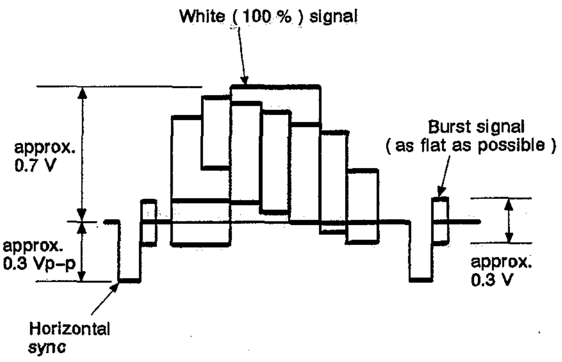

White (100 %) signal
Burst signal (as flat as possible)
approx. 0.7 V
approx. 0.3 Vp-p
approx. 0.3 V
Horizontal sync

Fig. 2-1-1 Colour bar signal of pattern generator

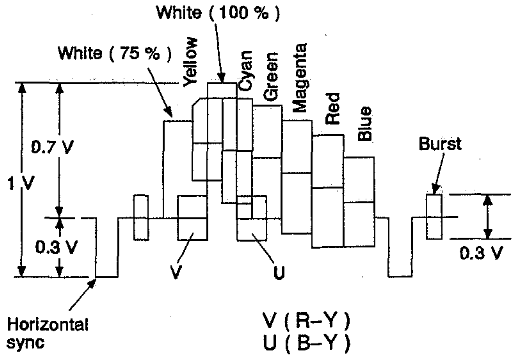

White (100 %)
White (75 %)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst
0.7 V
1 V
0.3 V
0.3 V
V
U
Horizontal sync
V (R-Y)
U (B-Y)

Fig. 2-1-2 Colour bar signal waveform

(75 %) →

White	Yellow	Cyan	Green	Magenta	Red	Blue
V	U	White 100%			Black	

Fig. 2-1-3 Colour bar pattern

2.2 SWITCHING REGULATOR CIRCUIT

NOTE: *Unless otherwise specified, all measurement point and adjustment parts are located on the REG (2) board.*

2.2.1 5 V DC OUTPUT VOLTAGE

Signal	•AUX •Colour bar
Mode	•REC •SP
Equipment	•Digital voltmeter
Measurement point	•TP4 (SW 5V)
Adjustment part	•R36
Specification	•5.32 ± 0.05 V DC

1) Connect a digital voltmeter to TP4.
2) Record a colour bar signal.
3) Adjust R36 for 5.32 ± 0.05 V DC.

2.3 SERVO CIRCUIT

NOTE: *Unless otherwise specified, all measurement point and adjustment parts are located on the VIDEO INTERFACE board.*

2.3.1 PB SWITCHING POINT

Signal	•Alignment tape [MH–2] •Stairstep
Mode	•PB •Digital tracking OFF
Equipment	•Oscilloscope
Measurement point	•TP10 (VIDEO OUT)
Ext.trigger (–)	•TP411 (DRUM FF)
Adjustment tool	•Presetting unit [PTU94008]
Specification	•6.5 ± 0.5 H

NOTE: *Set VCR to the mode A by remote controller.*

1) Connect an oscilloscope to TP10.
2) Playback the stairstep signal of the alignment tape.
3) Set the tracking control to the centre position by simultaneously pressing the (+) and (–) buttons.
4) Adjust by pressing " E " (–) or " F " (+) buttons of presetting unit for position the trigger point 6.5 ± 0.5 H from V.sync.

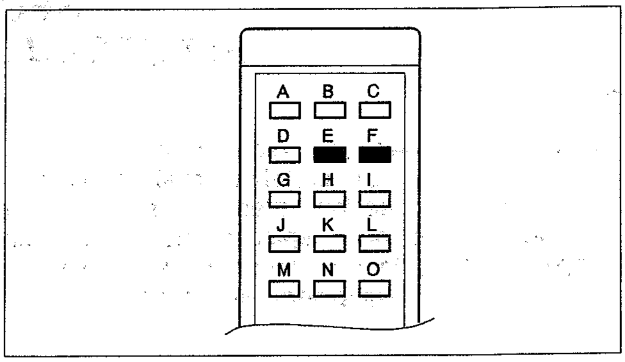


Fig. 2–3–1 Presetting unit

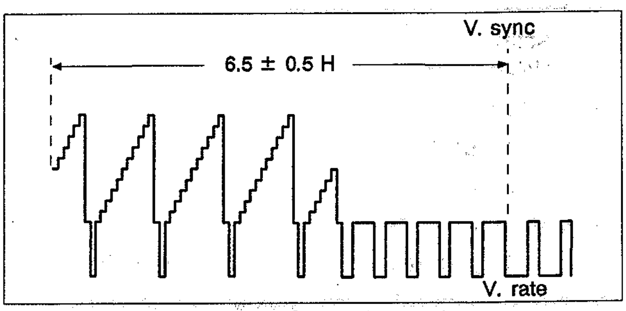


Fig. 2–3–2 Switching point

2.3.2 Slow tracking preset

Signal	•AUX •Colour bar
Mode	•REC → PB •SP/LP •Digital tracking OFF
Equipment	•TV monitor
Adjustment tool	•Presetting unit [PTU94008]
Specification	•Minimum noise

NOTE: *Set VCR to the mode A by remote controller.*

1) Record a colour bar signal in the SP mode.
2) Playback recorded signal on the FWD slow mode.
3) Set the tracking control to the centre position by simultaneously pressing the (+) and (–) buttons.
4) Observe the display on a TV monitor and adjust for optimum noise condition (best tracking) by depressing " B " (–) or " C " (+) buttons of presetting unit as required.
5) Depress the STOP button.
6) Confirm that the bar noise is not visible on the monitor in the slow mode.
7) Repeat steps 2) to 6) in REV slow mode.
8) Repeat steps 1) to 7) in LP mode.

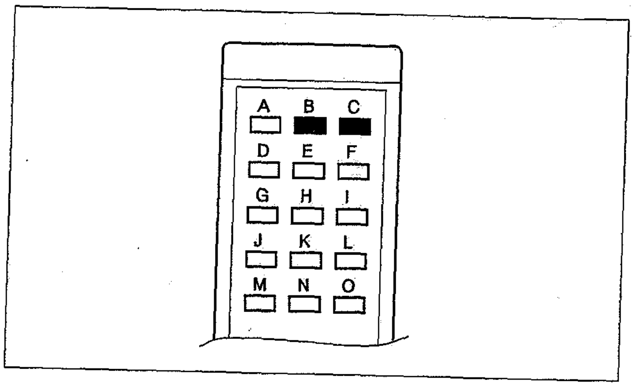


Fig. 2-3-3 Presetting unit

2.4 VIDEO CIRCUIT

NOTE: *Unless otherwise specified, all measurement point and adjustment parts are located on the VIDEO INTERFACE board.*

2.4.1 EE Y level

Signal	•AUX •Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP10 (VIDEO OUT)
Adjustment part	•R36 (EE Y LEVEL)
Specification	•0.97 ± 0.03 Vp-p.

1) Connect an oscilloscope to TP421.
2) Adjust R36 for 0.97 ± 0.03 Vp-p.

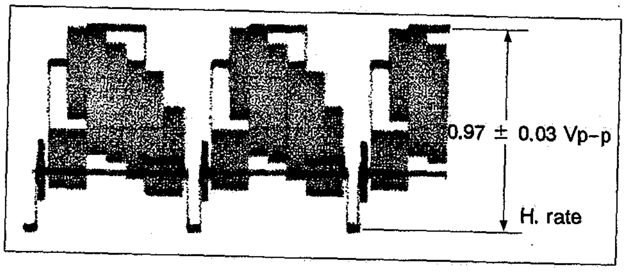


Fig. 2-4-1 EE Y level

2.4.2 Y NR level

Signal	•AUX •Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP421 (YNR) [VIDEO UNIT board]
Adjustment part	•R444 (YNR LEVEL) [VIDEO UNIT board]
Specification	•Minimum

1) Connect an oscilloscope to TP421.
2) Adjust R444 for minimum DC step difference.

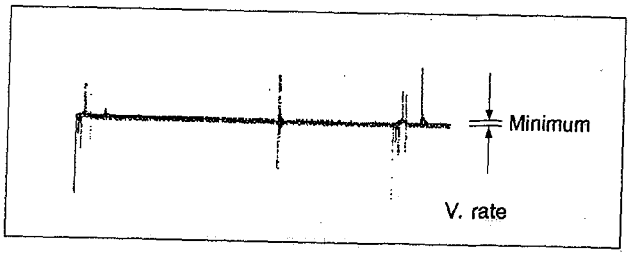


Fig. 2-4-2 Y NR level

2.4.3 SUB emphasis level

Signal	•AUX •Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP439 (SUB EMPHA IN) [VIDEO UNIT board]
Adjustment part	•R416 (SUB EMPHA LEVEL) [VIDEO UNIT board]
Specification	•400 ± 20 mVp-p

1) Connect an oscilloscope to TP439.
2) Adjust R416 for 400 ± 20 mVp-p.

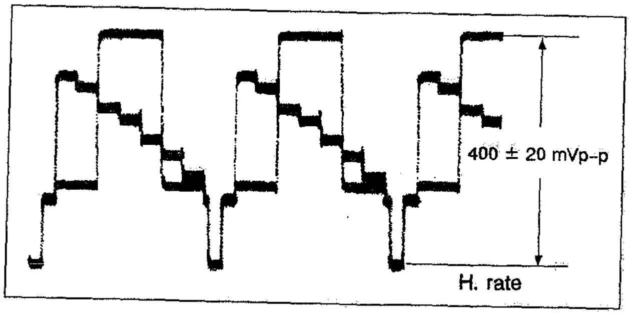


Fig. 2-4-3 Sub emphasis level

2.4.4 Y comb gain

Signal	•AUX •Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP225 (Y COMB-1) •TP226 (Y COMB-2)
Adjustment part	•R206 (Y COMB GAIN)
Specification	•Same level

1) Connect one channel of a dual trace oscilloscope to TP225 and the other channel to TP226.
2) Adjust R206 so that both signals become the same level.

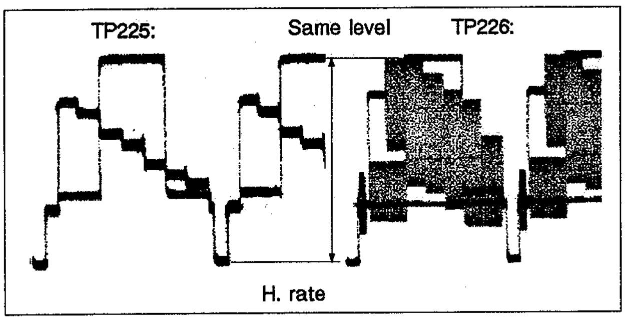


Fig. 2-4-4 Y comb gain

2.4.5 Y comb

Signal	•AUX •Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP225 (Y COMB-1)
Adjustment part	•R219 (Y COMB-1) •R215 (Y COMB-2) •R231 (Y COMB-3)
Specification	•Minimum magenta level

1) Connect an oscilloscope to TP225.
2) Adjust R219, R215 and R231 alternately for minimum magenta level.

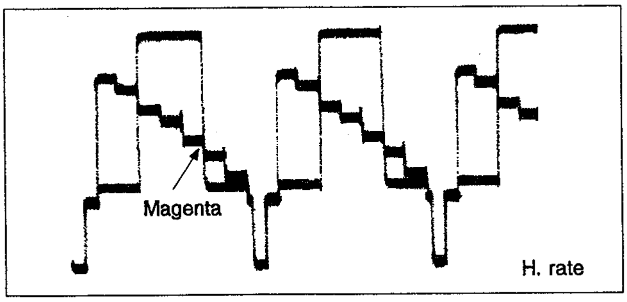


Fig. 2-4-5 Y comb

2.4.6 N PB Y level

Signal	•AUX •Colour bar
Mode	•REC → PB •SP
Equipment	•Oscilloscope
Measurement point	•TP10 (VIDEO OUT)
Adjustment part	•R64 (N PB Y LEVEL)
Specification	•0.97 ± 0.03 Vp-p

1) Connect an oscilloscope to TP10.
2) Record a colour bar signal in N-VHS mode, then play it back.
3) Adjust R64 for 0.97 ± 0.03 Vp-p.

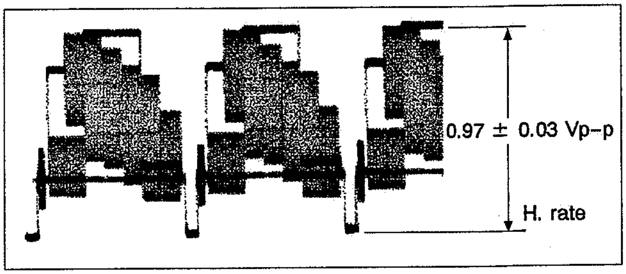


Fig. 2-4-6 N PB Y level

2.4.7 S PB Y level

Signal	•AUX •Colour bar
Mode	•REC → PB •SP •S-VHS
Equipment	•Oscilloscope
Measurement point	•TP10 (VIDEO OUT)
Adjustment part	•R63 (S PB Y LEVEL)
Specification	•0.97 ± 0.03 Vp-p

1) Connect an oscilloscope to TP10.
2) Record a colour bar signal in S-VHS mode, then play it back.
3) Adjust R63 for 0.97 ± 0.03 Vp-p.

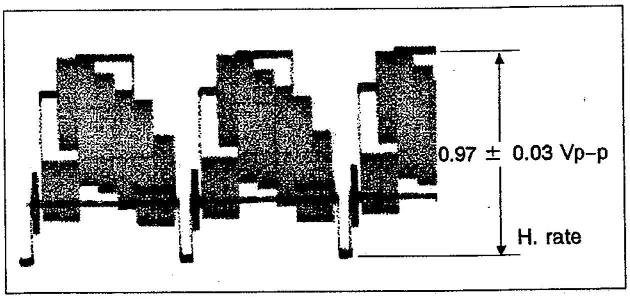


Fig. 2-4-7 S PB Y level

2.4.8 N VIDEO EQ

Signal	•AUX •Video sweep
Mode	•REC → PB •SP/LP •N-VHS
Equipment	•Oscilloscope
Measurement point	•TP1 (Y OUT)
Adjustment part	•R65 (N SP VIDEO EQ) [REC AMP board] •R66 (N LP VIDEO EQ) [REC AMP board]
Specification	•2.7 ± 0.3 scale (SP) •2.2 ± 0.5 scale (LP)

1) Connect an oscilloscope to TP1.
2) Record a video sweep signal in N-VHS SP mode, then playback it.
3) If the sweeper's 100 kHz marker frequency is for 3 scale divisions on the oscilloscope screen, adjust R65 so that 2.0 MHz marker level becomes 2.7 ± 0.3 scale divisions.
4) Record a video sweep signal in N-VHS LP mode, then playback it.
5) If the sweeper's 100 kHz marker frequency is for 3 scale divisions on the oscilloscope screen, adjust R66 so that 2.0 MHz marker level becomes 2.2 ± 0.5 scale divisions.

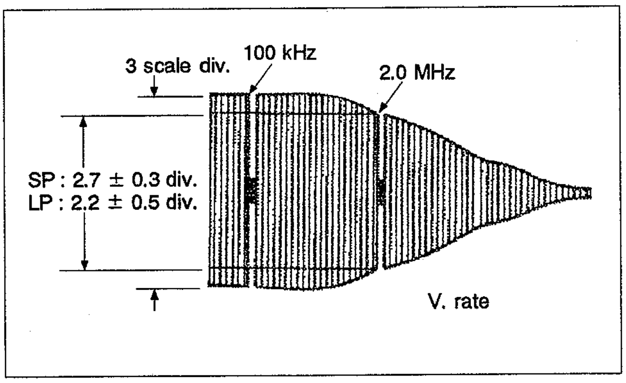


Fig. 2-4-8 N VIDEO EQ

《Alternate method》

1) Record a colour bar signal in N-VHS SP mode.
2) Play it back to observe the picture and adjust R65 for best resolution, without impaired S/N.
3) After adjustment, confirm absence of black /white inversion.
4) Record a colour bar signal in N-VHS LP mode.
5) Play it back to observe the picture and adjust R66 for best resolution, without impaired S/N.
6) After adjustment, confirm absence of black /white inversion.

2.4.9 S VIDEO EQ

Signal	•AUX •Video sweep
Mode	•REC → PB •SP/LP •S-VHS
Equipment	•Oscilloscope
Measurement point	•TP1 (Y OUT)
Adjustment part	•R35 (S SP VIDEO EQ) [REC AMP board] •R36 (S LP VIDEO EQ) [REC AMP board]
Specification	•2.7 ± 0.2 scale (SP) •2.1 ± 0.2 scale (LP)

1) Connect an oscilloscope to TP1.
2) Record a video sweep signal in S-VHS SP mode, then playback it.
3) If the sweeper's 100 kHz marker frequency is for 3 scale divisions on the oscilloscope screen, adjust R35 so that 3.0 MHz marker level becomes 2.7 ± 0.2 scale divisions.
4) Record a video sweep signal in S-VHS LP mode, then playback it.
5) If the sweeper's 100 kHz marker frequency is for 3 scale divisions on the oscilloscope screen, adjust R36 so that 3.0 MHz marker level becomes 2.1 ± 0.2 scale divisions.

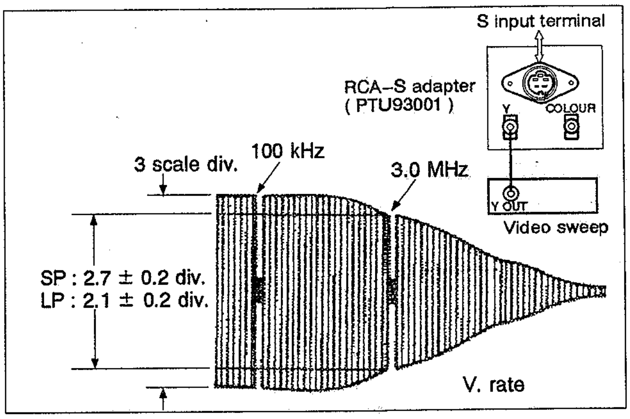


Fig. 2-4-9 S VIDEO EQ

《Alternate method》

1) Record a colour bar signal in S-VHS SP mode.
2) Play it back to observe the picture and adjust R35 for best resolution, without impaired S/N.
3) After adjustment, confirm absence of black /white inversion.
4) Record a colour bar signal in S-VHS LP mode.
5) Play it back to observe the picture and adjust R36 for best resolution, without impaired S/N.
6) After adjustment, confirm absence of black /white inversion.

2.4.10 2 H delayed colour level

Signal	•AUX •Colour bar
Mode	•EE •SP •S-VHS
Equipment	•Oscilloscope
Measurement point	•TP231 (2 H DLY CHROMA-1) •TP232 (2 H DLY CHROMA-2)
Adjustment part	•L203 (2 H DLY CHROMA LEVEL-1) •R234 (2 H DLY CHROMA LEVEL-2)
Specification	•Minimum level

1) Connect one channel of dual trace oscilloscope to TP231 and the other channel to TP232.
2) Change CH-2 to reverse (INV) mode and align both channels VOLTs/DIV. Switch to the same range and select vertical mode SW to ADD.
3) Adjust L203 and R234 for minimum level.

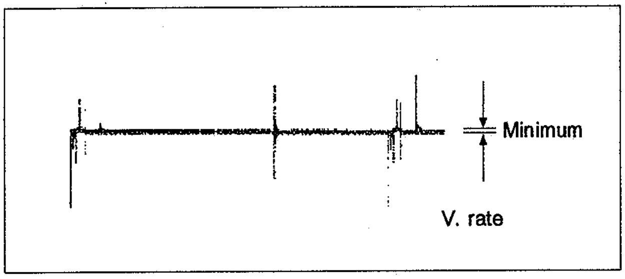


Fig.2-4-10 2H delayed colour level

2.4.11 REC colour level

Signal	•AUX •Colour bar
Mode	•REC •SP/LP •S-VHS
Equipment	•Oscilloscope
Measurement point	•IC2 pin 13 (REC COLOUR) [REC AMP board]
Adjustment part	•R91 (SP REC COLOUR LEVEL) [REC AMP board] •R90 (LP REC COLOUR LEVEL) [REC AMP board]
Specification	•150 ± 10 mVp-p (SP) •180 ± 10 mVp-p (LP)

1) Record a colour bar signal in S-VHS SP mode.
2) Adjust for R91 for 150 ± 10 mVp-p.
3) Record a colour bar signal in S-VHS LP mode.
4) Adjust for R90 for 180 ± 10 mVp-p.

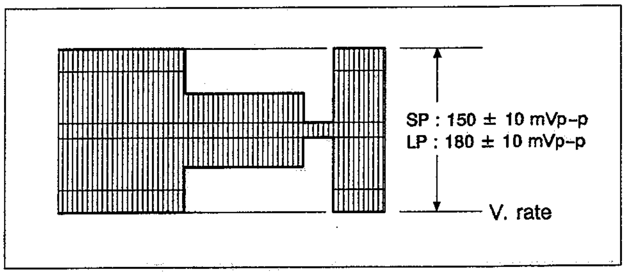


Fig.2-4-11 REC COLOUR level

2.5 AUDIO CIRCUIT

NOTE: *Unless otherwise specified, all measurement point and adjustment parts are located on the VIDEO INTERFACE board.*

2.5.1 Audio bias level

Signal	•AUX •no signal
Mode	•REC •SP •N-VHS
Equipment	•Millivoltmeter
Measurement point	•TP331 (BIAS) •TP332 (BIAS GND)
Adjustment part	•R304 (BIAS LEVEL)
Specification	•2.5 mVrms

1) Connect a millivoltmeter between TP331 and TP332.
2) Set for REC mode without incoming signal.
3) Adjust R304 for 2.5 mVrms.

2.5.2 EE level

Signal	•AUX •1 kHz
Mode	•EE
Equipment	•Millivoltmeter
Measurement point	•Audio out
Adjustment part	•R302 (EE LEVEL) •R301 (EE BAL)
Specification	•-6 ± 1dBs.

1) Supply a sine wave of 1 kHz, -8dBs (0.9 Vp-p, 0.32 Vrms) to the Peri. In terminal.
2) Adjust R302 and R301 so that output level of the L and R channels are -6 dBs (1.1 Vp-p, 0.39 Vrms) ± 1 dBs, respectively.

2.5.3 Audio REC FM level

Signal	•AUX •no signal
Mode	•REC •S-VHS •LP
Equipment	•Oscilloscope
Measurement point	•TP54 (A REC FM) [REC AMP board]
Adjustment part	•R216 (AUDIO REC FM LEVEL)
Specification	•90 ± 10 mVp-p.

1) Connect an oscilloscope to TP54.
2) Record no signal in S-VHS LP mode.
3) Adjust R216 so that the higher channel level is 90 ± 10 mVp-p.

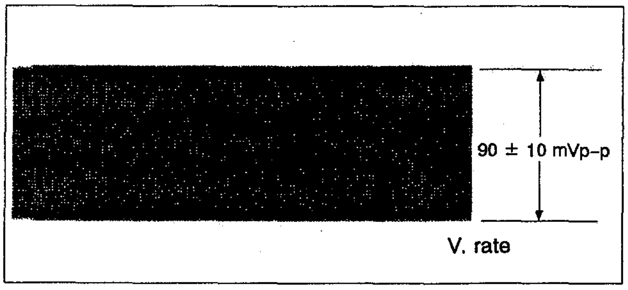


Fig. 2-5-1 Audio REC FM level

2.6 ON SCREEN CIRCUIT

NOTE: • *Unless otherwise specified, all measurement point and adjustment parts are located on the ON SCREEN board.*
• *For the following adjustments, use 1 : 1 probe with input capacitance than 100 pF.*

2.6.1 Dot clock

Signal	•AUX •no signal
Mode	•EE
Equipment	•Frequency counter
Measurement point	•TP901 (DOT CLOCK)
Adjustment part	•C905 (DOT CLOCK)
Specification	•7.30 ± 0.05 MHz.

1) Connect a frequency counter to TP901.
2) Short IC901 pin 3 to TP GND and pin 30 to TP 5V.
3) Adjust C905 for 7.30 ± 0.05 MHz.

2.6.2 Sub carrier

Signal	•AUX •no signal
Mode	•EE
Equipment	•Frequency counter
Measurement point	•TP902 (COLOUR BURST)
Adjustment part	•C916 (COLOUR BURST)
Specification	•17.73447 ± 0.00030 MHz.

1) Connect a frequency counter to TP902.
2) Adjust C916 for 17.73447 ± 0.00030 MHz.

2.7 TIMER CIRCUIT

NOTE: • *Unless otherwise specified, all measurement point and adjustment parts are located on the TIMER board.*
•*For the following adjustments, use 10 : 1 probe with input capacitance than 100 pF.*

2.7.1 Timer clock

Signal	•AUX •no signal
Mode	•EE
Equipment	•Frequency counter
Measurement point	•IC1 pin 16 (TIMER CLOCK)
Adjustment part	•C6 (TIMER CLOCK)
Specification	•488.2813 ± 0.0005 μ sec. (2048.000 ± 0.002 Hz)

1) Connect a frequency counter to IC1 pin 16.
2) Short IC1 pin 8 to TP GND.
3) Short the lead's capacitor C3 once in order to reset IC1.
4) Adjust C6 for 488.2813 ± 0.0005 μ sec. (2048.000 ± 0.002 Hz)

2.8 TUNER CIRCUIT

NOTE: *Unless otherwise specified, all measurement point and adjustment parts are located on the TUNER board.*

2.8.1 VCO

〈Factory Method〉

Signal	•Sweep generator output
Mode	•Tuner (without antenna input Signal)
Equipment	•Oscilloscope •IF sweep signal generator (with suitable markers, PIF, SIF, etc.)
Sweeper probe	• Sweep signal supply cable (See Fig. 2-8-1)
Measurement point	•IC1 pin 28
Adjustment part	•T2 (VCO)
Specification	•36.9 MHz (no distortion)

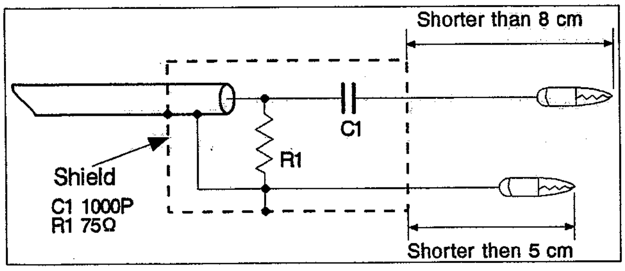


Fig. 2-8-1 Sweeper probe

1) Use a sweeper probe as shown in Fig.2-8-1 and connect the sweep generator output to pin 1 of SAW1.
2) Apply pin 6 of IC1 to 4.5 V DC.
3) Connect the oscilloscope to pin 28 of IC1 (VIDEO DET OUT) and adjust T2 to align the waveform with the frequency marker as shown in Fig. 2-8-2.

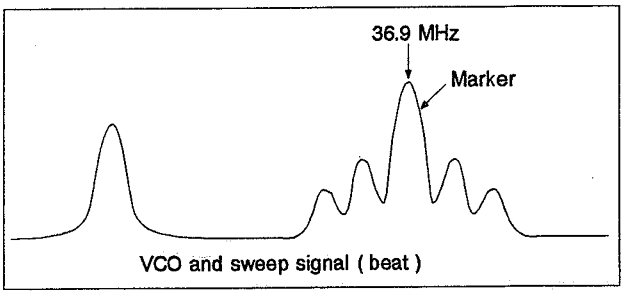


Fig. 2-8-2 VCO coil

《Alternate method》

Signal	•TV broadcasting
Mode	•Tuner
Equipment	•Monitor-TV
Other condition	•Same

1) Receive a colour broadcasting on a VHF-HI channel (7 to 13).
2) Adjust T2 to obtain the best picture.
3) Adjust to the centre of the optimum picture range.
4) Select other channels to confirm proper channel selection.

2.8.2. RF AGC

Note: *Before the following adjustment,*
1) Connect a cable to ANT IN and terminate TV OUT with 75 ohms.
2) Set a TV channel signal generator as follows.
Video : 65 dBμ 75 Ω, colour bar 87.5 % modulation
Audio : 55 dBμ 75 Ω, 1 kHz ± 50 kHz deviation

〈Factory Method〉

Signal	•TV broadcasting
Mode	•Tuner
Equipment	•Oscilloscope •TV signal generator
Measurement point	•IF terminal (U/V tuner)
Adjustment part	•R21 (RF AGC)
Specification	•Maximum level (with minimum noise)

1) Connect the oscilloscope to IF terminal of U/V tuner (front end).

2) Adjust R21 for maximum level, then again adjust R21 for 5.0 dB again.

《Alternate method》

Note: *Adjust R21 (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs due to strong electrical fields.*

1) Adjust R21 to minimize noise or streaks on the TV screen.

2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

2.8.3. Colour level

〈Factory Method〉

Signal	•TV broadcasting •Colour bar
Mode	•Tuner
Equipment	•Oscilloscope
Measurement point	•CN1 pin 3 (VIDEO OUT)
Adjustment part	•R40 (COLOUR LEVEL)
Specification	•Magenta level 56 %

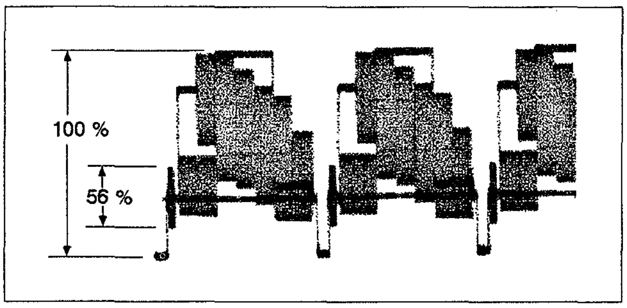


Fig. 2-8-3 Colour level

1) Receive a colour bar signal. Set Y level for 100% reference signal.

2) Adjust R40 for magenta level of 56 % at pin 3 of CN1.

《Alternate method》

1) Receive a colour broadcast.

2) Adjust R40 so that the magenta level becomes 2/3 of the sync level.

2.9 DEMODULATOR CIRCUIT

NOTE: *Unless otherwise specified, all measurement point and adjustment parts are located on the DEMODULATOR board.*

2.9.1 First audio detector coil

〈Factory Method〉

Signal	•Audio multipix TV signal generator
Mode	•BILLING mode •SUB unmod •MAIN mod
Equipment	•Distortion meter
Measurement point	•IC201 pin 3
Adjustment part	•T4 (FIRST AUDIO)
Specification	•Minimum distortion

1) Apply main audio signal to the front end IF terminal.

2) Connect a distortion meter to pin 3 of IC201.

3) Adjust T4 of the IF board for minimum distortion.

2.9.2 Second audio detector coil

〈Factory Method〉

Signal	•Audio multipix TV signal generator
Mode	•BILLING mode •SUB mod •MAIN unmod
Equipment	•Distortion meter
Measurement point	•IC201 pin 2
Adjustment part	•T201 (SECOND AUDIO)
Specification	•Minimum distortion

1) Connect a distortion meter to pin 2 of IC201.

2) Adjust T201 of the IF board for minimum distortion.

2.9.3 Stereo separation

〈**Factory Method**〉

Signal	•Audio multipix TV signal generator
Mode	•STEREO mode •R mod •L unmod
Equipment	•Oscilloscope
Measurement point	•IC201 pin 5
Adjustment part	•R202 (STEREO SEPARATION)
Specification	•Minimum level

1) Set a signal generator to stereo mode, but adjust only R channel.
2) Connect an oscilloscope to pin 5 of IC201.
3) Adjust R202 for minimum output level.

2.9.4 Buzz

〈**Factory Method**〉

Signal	•Audio multipix TV signal generator
Mode	•STEREO mode •R unmod •L unmod
Equipment	•Noise meter
Measurement point	•IC201 pin 1
Adjustment part	•T8 (PHILIPS PATTERN BUZZ) •T2 (CROSSPATCH BUZZ)
Specification	•Minimum noise

1) Connect a noise meter to pin 1 of IC201.
2) Connect an oscilloscope to AC output of the noise meter.
3) Adjust T8 of the IF board for minimum philips pattern noise.
4) Adjust T2 of the IF board for minimum crosspatch noise.

2.9.5 Audio output level

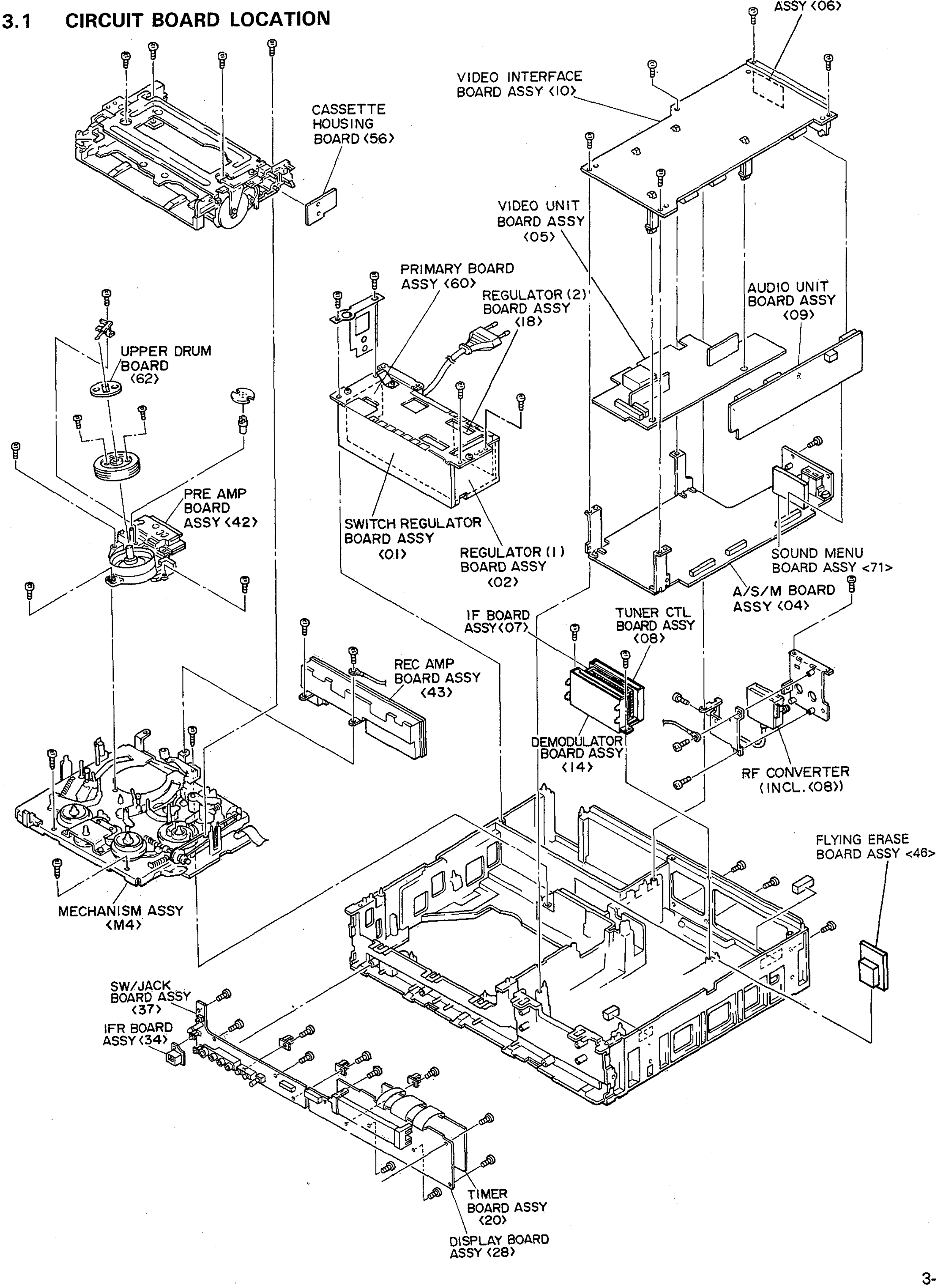
〈**Factory Method**〉

Signal	•Audio multipix TV signal generator
Mode	•STEREO mode •R mod/unmod •L unmod/mod
Equipment	•Noise meter
Measurement point	•CN201 pin 1 (L) •CN201 pin 3 (R)
Adjustment part	•R221 (L AUDIO LEVEL) •R224 (R AUDIO LEVEL)
Specification	•-14.0 ± 0.5 dBs

1) Set a signal generator for stereo mode.
2) Connect a noise meter to pin 1 of CN201.
3) Adjust R221 for -14.0 ± 0.5 dBs.
4) Similarly, connect a noise meter to pin 3 of CN201 and adjust R224 for -14.0 ± 0.5 dBs.

SECTION 3
CHARTS AND DIAGRAMS

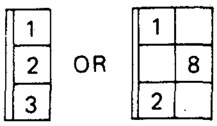
3.1 CIRCUIT BOARD LOCATION


TERMINAL BOARD ASSY <06>
VIDEO INTERFACE BOARD ASSY <10>
CASSETTE HOUSING BOARD <56>
VIDEO UNIT BOARD ASSY <05>
PRIMARY BOARD ASSY <60>
REGULATOR (2) BOARD ASSY <18>
AUDIO UNIT BOARD ASSY <09>
UPPER DRUM BOARD <62>
PRE AMP BOARD ASSY <42>
SWITCH REGULATOR BOARD ASSY <01>
REGULATOR (1) BOARD ASSY <02>
SOUND MENU BOARD ASSY <71>
A/S/M BOARD ASSY <04>
IF BOARD ASSY <07>
TUNER CTL BOARD ASSY <08>
REC AMP BOARD ASSY <43>
DEMODULATOR BOARD ASSY <14>
RF CONVERTER (INCL. <08>)
FLYING ERASE BOARD ASSY <46>
MECHANISM ASSY <M4>
SW/JACK BOARD ASSY <37>
IFR BOARD ASSY <34>
TIMER BOARD ASSY <20>
DISPLAY BOARD ASSY <28>

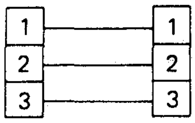
3.2 GENERAL INFORMATION

3.2.1 Connections

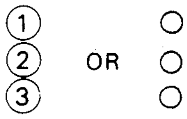
Note:
Unless otherwise specified, only signal input flow is indicated.
Connection arrows indicate only signal outputs.



: Connectors



: Board in connectors

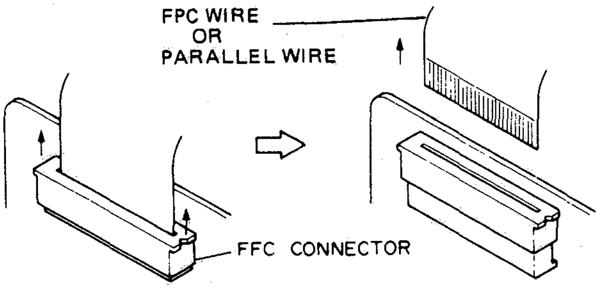


: Direct connections

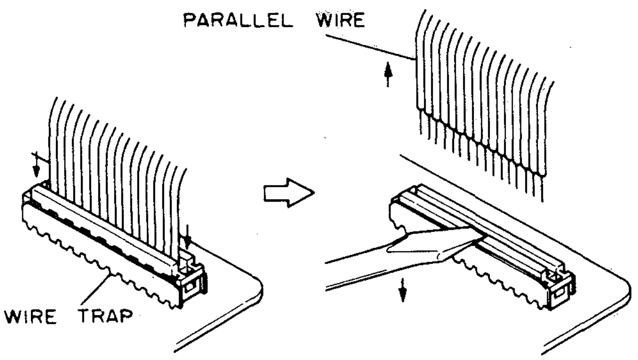
: Connected pattern in the board.
Abbreviations
V : Video M : Mechacon
S : Servo A : Audio
VS : Signal flow from video to servo.

3.2.2 Disconnecting the flatwire

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

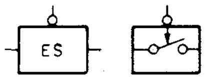


2. Depress the connector structure downward to release the clamp when removing or inserting the flat wire cable, as indicated below.

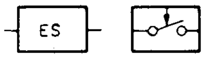


3.2.3 Indications

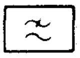
AUX : Active only at high.
$\overline{AUX}$: Active only at low.
$\bar{A}\bar{U}\bar{X}$: Active only at middle.
$\bar{A}U\bar{X}$: Active only at open.



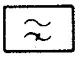
: Active only at low for electronic switch.



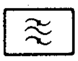
: Active only at high for electronic switch.



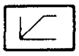
: Low pass filter.



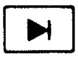
: High pass filter.



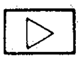
: Band pass filter.



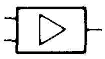
: Limiter.



: Detector.



: Amplifier.



: Mixer stage.

3.2.4 Schematic diagram values

Unless otherwise specified.

1. All resistance values are in ohms, 1/6 W or 1/8 W (refer to parts list).
2. All capacitance values are in μF, (P; PF).
3. All inductance values are in μH, (m; mH).
4. All diodes are 1SS133 or MA165, (refer to parts list).
5. Voltages are DC-measured (reference to ground) with a digital voltmeter during recording (SP mode) and playback (SP mode) with alignment tape. Where voltages differ between recording and playback, the voltage during playback is shown in parenthesis.
6. Waveforms (VIDEO System) are measured (reference to ground) with a color bar during recording (SP mode) and playback (SP mode) with alignment tape.
7. Waveforms (AUDIO System) are measured (reference to ground) with 1 kHz (-8 dBs) during recording and playback with alignment tape (1 kHz).
8. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.

3.2.5 Signal flow in the schematic

➡ Recording signal path
⇨ Playback signal path
⇰ REC/PB signal path

6

3.3 BOARD INTERCONNECTION

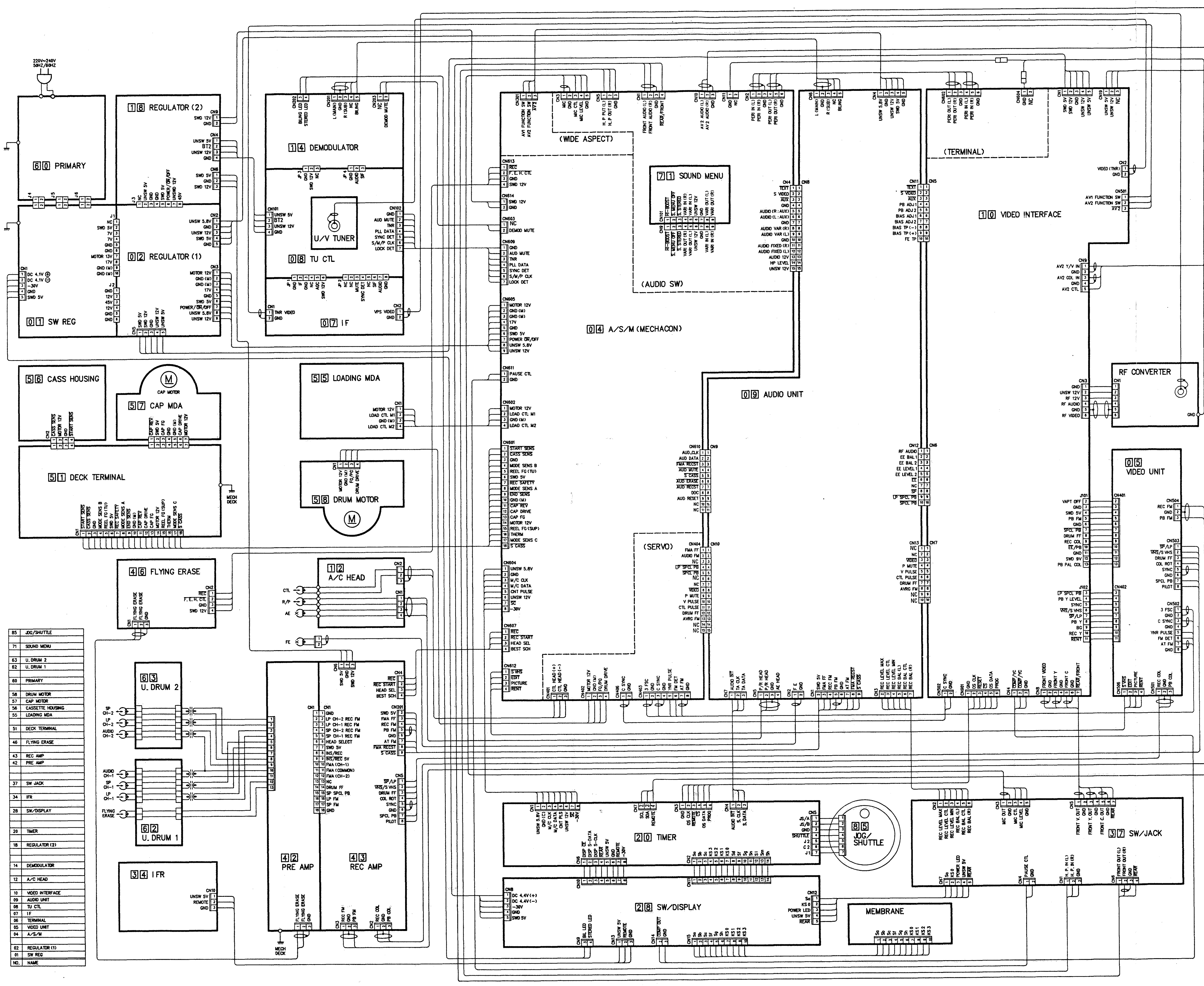
5

4

3

2

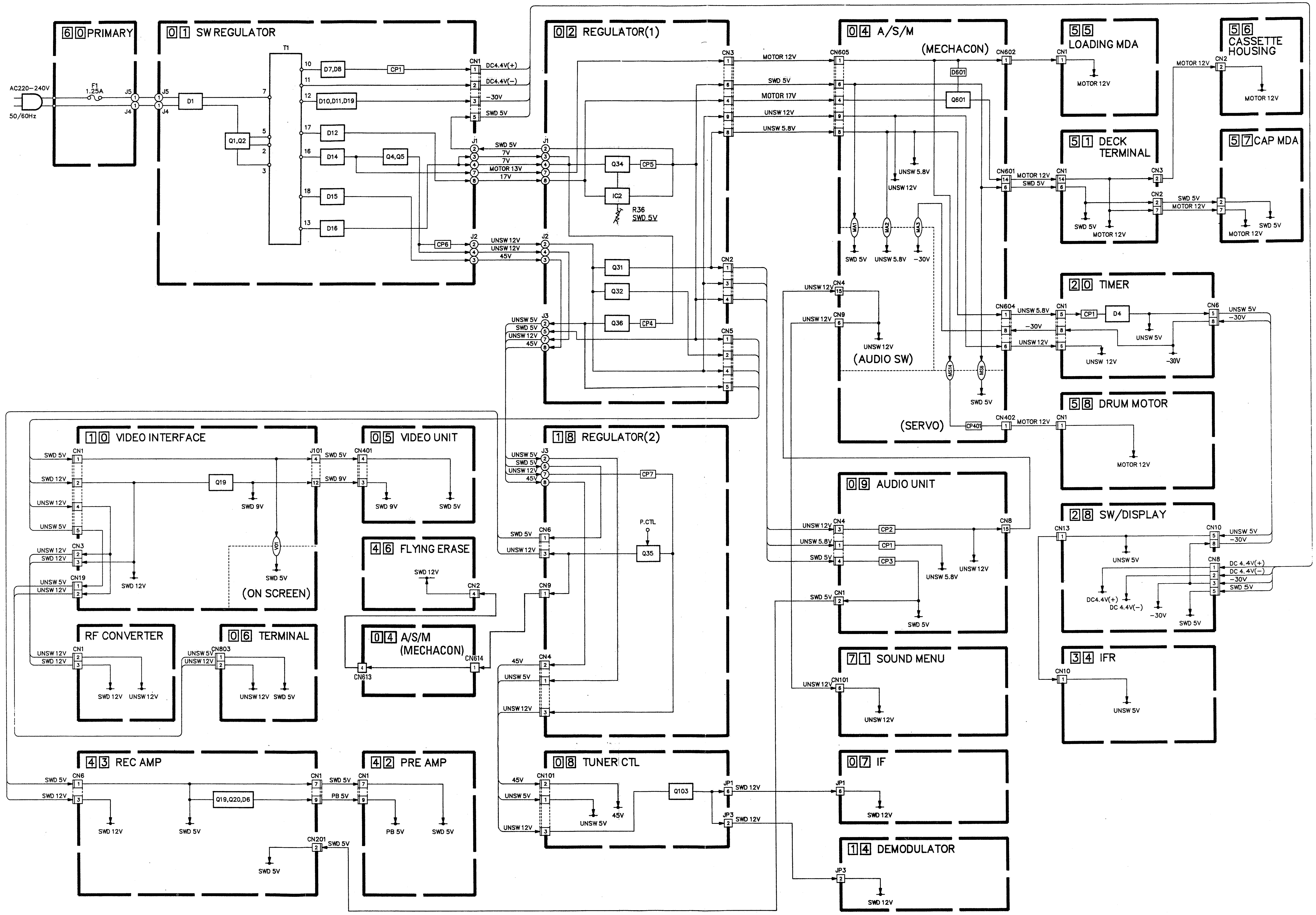
1


220V~240V 50HZ/60HZ
60 PRIMARY
18 REGULATOR (2)
14 DEMODULATOR
08 TU CTL
U/V TUNER
07 IF
01 SW REG
02 REGULATOR (1)
04 A/S/M (MECHACON)
(WIDE ASPECT)
71 SOUND MENU
(AUDIO SW)
(SERVO)
09 AUDIO UNIT
10 VIDEO INTERFACE
(TERMINAL)
06 TERMINAL
RF CONVERTER
05 VIDEO UNIT
56 CASS HOUSING
57 CAP MDA
CAP MOTOR
55 LOADING MDA
58 DRUM MOTOR
51 DECK TERMINAL
MECH DECK
46 FLYING ERASE
12 A/C HEAD
CTL
R/P
AE
FE
63 U. DRUM 2
62 U. DRUM 1
SP CH-2
LP CH-2
AUDIO CH-2
AUDIO CH-1
SP CH-1
LP CH-1
FLYING ERASE
42 PRE AMP
43 REC AMP
34 IFR
20 TIMER
85 JOG/SHUTTLE
28 SW/DISPLAY
MEMBRANE
37 SW/JACK

NO.	NAME
85	JOG/SHUTTLE
71	SOUND MENU
63	U. DRUM 2
62	U. DRUM 1
60	PRIMARY
58	DRUM MOTOR
57	CAP MOTOR
56	CASSETTE HOUSING
55	LOADING MDA
51	DECK TERMINAL
46	FLYING ERASE
43	REC AMP
42	PRE AMP
37	SW JACK
34	IFR
28	SW/DISPLAY
20	TIMER
18	REGULATOR (2)
14	DEMODULATOR
12	A/C HEAD
10	VIDEO INTERFACE
09	AUDIO UNIT
08	TU CTL
07	IF
06	TERMINAL
05	VIDEO UNIT
04	A/S/M
02	REGULATOR (1)
01	SW REG

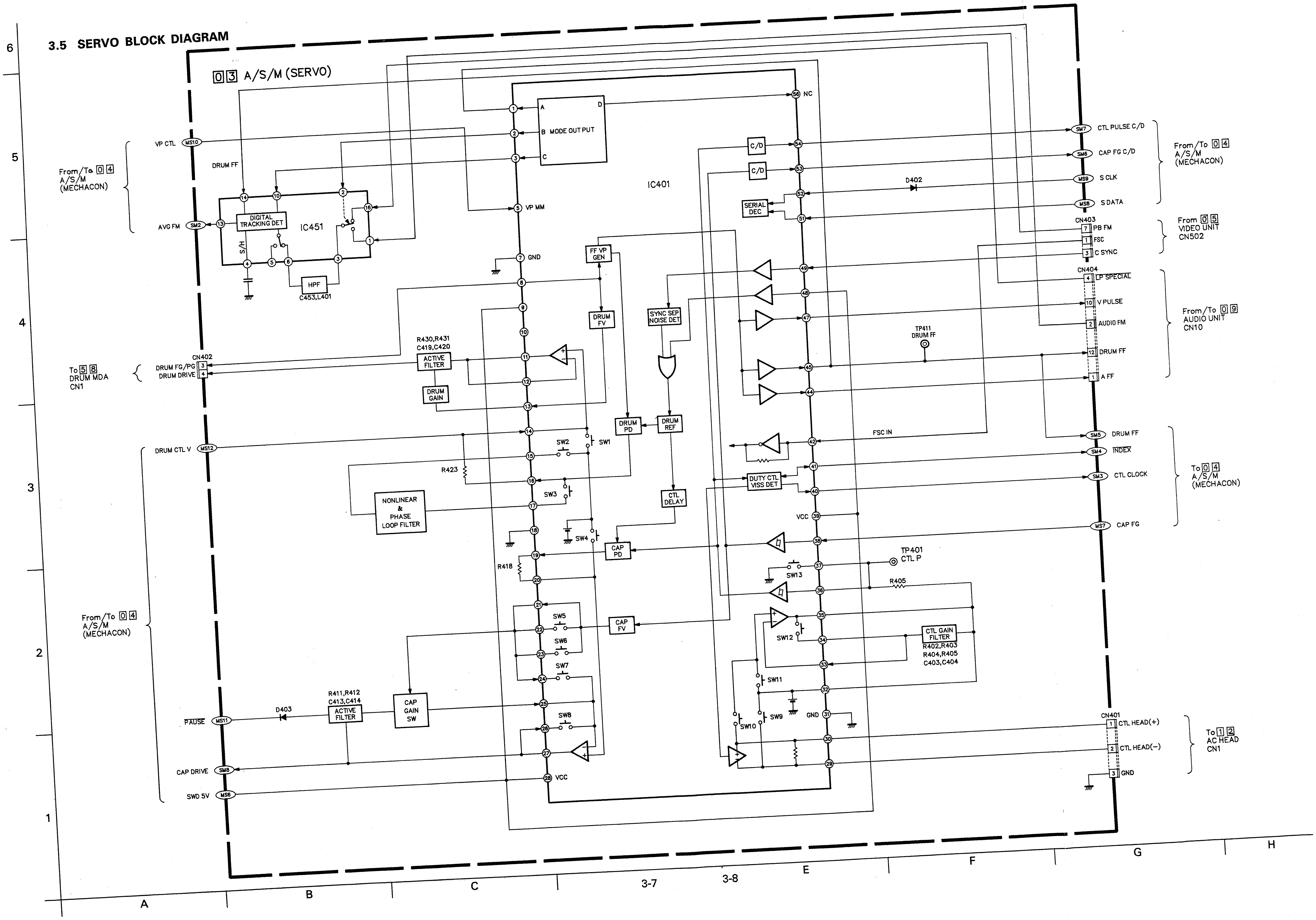
A B C D E F G H

3.4 POWER SYSTEM BLOCK DIAGRAM



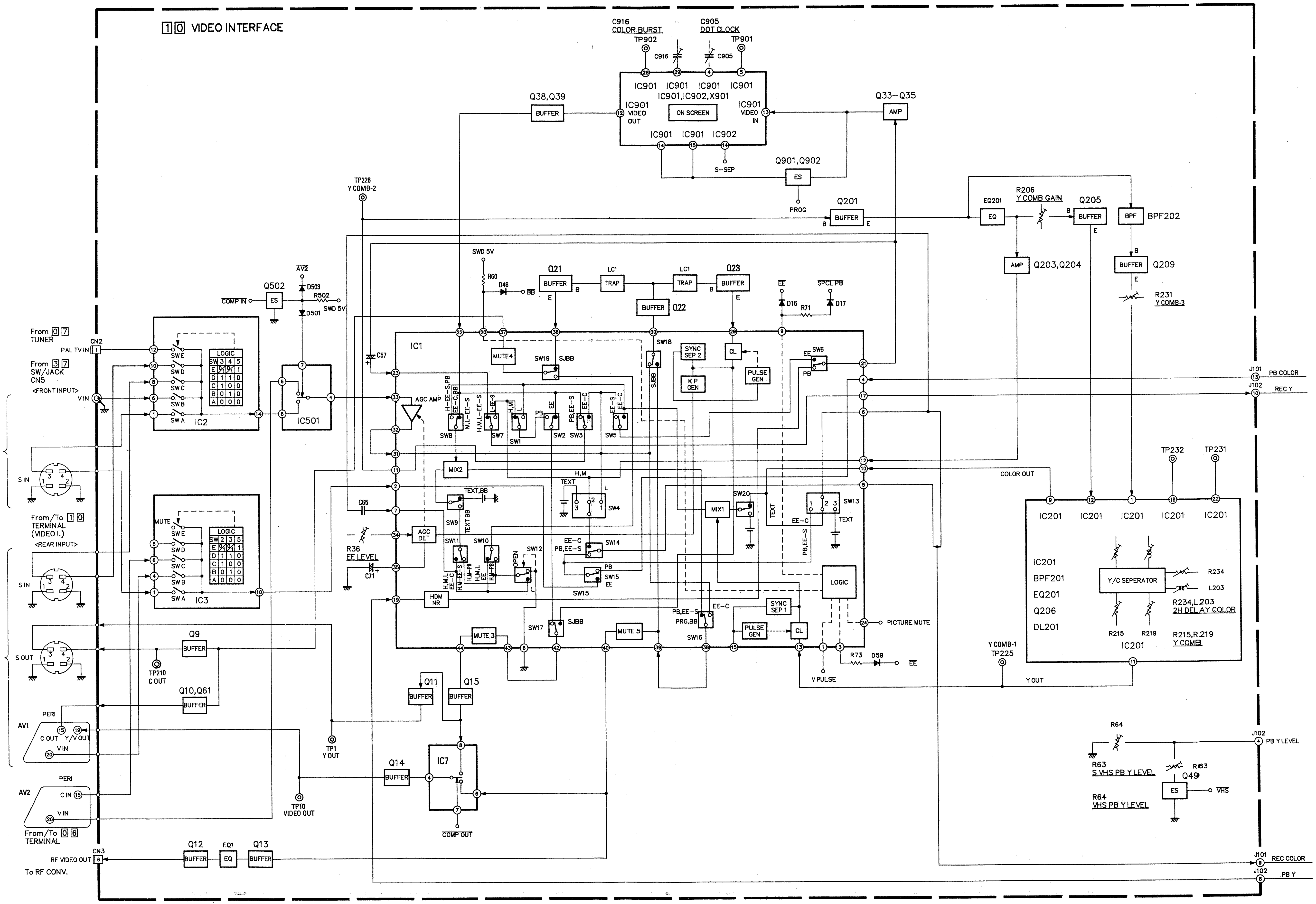
60 PRIMARY
AC220−240V
50/60Hz
F1 1.25A
01 SW REGULATOR
T1
D1
Q1,Q2
D7,D8
D10,D11,D19
D12
D14
Q4,Q5
D15
D16
CP1
CP6
DC4.4V(+)
DC4.4V(−)
−30V
SWD 5V
7V
MOTOR 13V
17V
UNSW 12V
45V
02 REGULATOR(1)
Q34
CP5
IC2
R36
Q31
Q32
Q36
CP4
MOTOR 12V
MOTOR 17V
UNSW 5.8V
04 A/S/M
(MECHACON)
D601
Q601
(AUDIO SW)
(SERVO)
CP401
MA1
MA2
MA3
MS14
MS5
55 LOADING MDA
56 CASSETTE HOUSING
51 DECK TERMINAL
57 CAP MDA
20 TIMER
D4
58 DRUM MOTOR
09 AUDIO UNIT
CP2
CP3
28 SW/DISPLAY
DC 4.4V(+)
DC 4.4V(−)
34 IFR
71 SOUND MENU
07 IF
14 DEMODULATOR
10 VIDEO INTERFACE
Q19
SWD 9V
UNSW 5V
VD1
(ON SCREEN)
05 VIDEO UNIT
46 FLYING ERASE
04 A/S/M
(MECHACON)
18 REGULATOR(2)
CP7
P.CTL
Q35
RF CONVERTER
06 TERMINAL
43 REC AMP
Q19,Q20,D6
PB 5V
42 PRE AMP
08 TUNER CTL
Q103
SWD 12V

3.5 SERVO BLOCK DIAGRAM

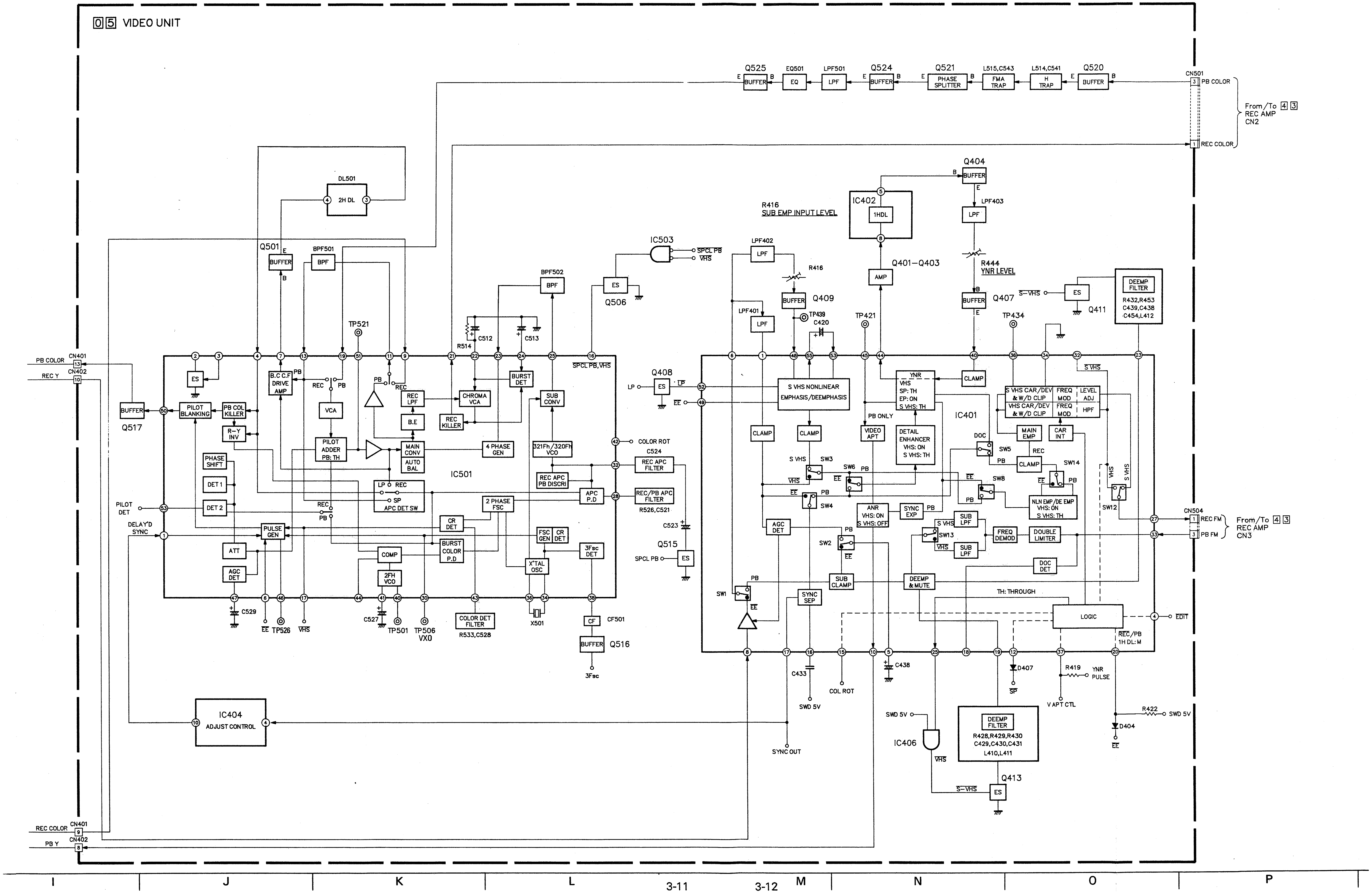


03 A/S/M (SERVO)
IC401
IC451
MODE OUT PUT
A
B
C
D
NC
VP MM
GND
VCC
C/D
C/D
SERIAL DEC
D402
DIGITAL TRACKING DET
S/H
HPF
C453,L401
FF VP GEN
DRUM FV
SYNC SEP NOISE DET
DRUM PD
DRUM REF
CTL DELAY
CAP PD
CAP FV
R430,R431
C419,C420
ACTIVE FILTER
DRUM GAIN
R423
NONLINEAR & PHASE LOOP FILTER
R418
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SW11
SW12
SW13
R411,R412
C413,C414
ACTIVE FILTER
CAP GAIN SW
D403
DUTY CTL VISS DET
FSC IN
TP411 DRUM FF
TP401 CTL P
R405
CTL GAIN FILTER
R402,R403
R404,R405
C403,C404
VP CTL MS10
DRUM FF
From/To 04 A/S/M (MECHACON)
AVG FM SM2
CN402
DRUM FG/PG 3
DRUM DRIVE 4
To 58 DRUM MDA CN1
DRUM CTL V MS12
From/To 04 A/S/M (MECHACON)
PAUSE MS11
CAP DRIVE SM8
SWD 5V MS6
SM7 CTL PULSE C/D
SM6 CAP FG C/D
MS9 S CLK
MS8 S DATA
From/To 04 A/S/M (MECHACON)
CN403
7 PB FM
1 FSC
3 C SYNC
From 05 VIDEO UNIT CN502
CN404
4 LP SPECIAL
10 V PULSE
2 AUDIO FM
12 DRUM FF
1 A FF
From/To 09 AUDIO UNIT CN10
SM5 DRUM FF
SM4 INDEX
SM3 CTL CLOCK
MS7 CAP FG
To 04 A/S/M (MECHACON)
CN401
1 CTL HEAD(+)
2 CTL HEAD(−)
3 GND
To 12 AC HEAD CN1
A
B
C
D
E
F
G
H
1
2
3
4
5
6

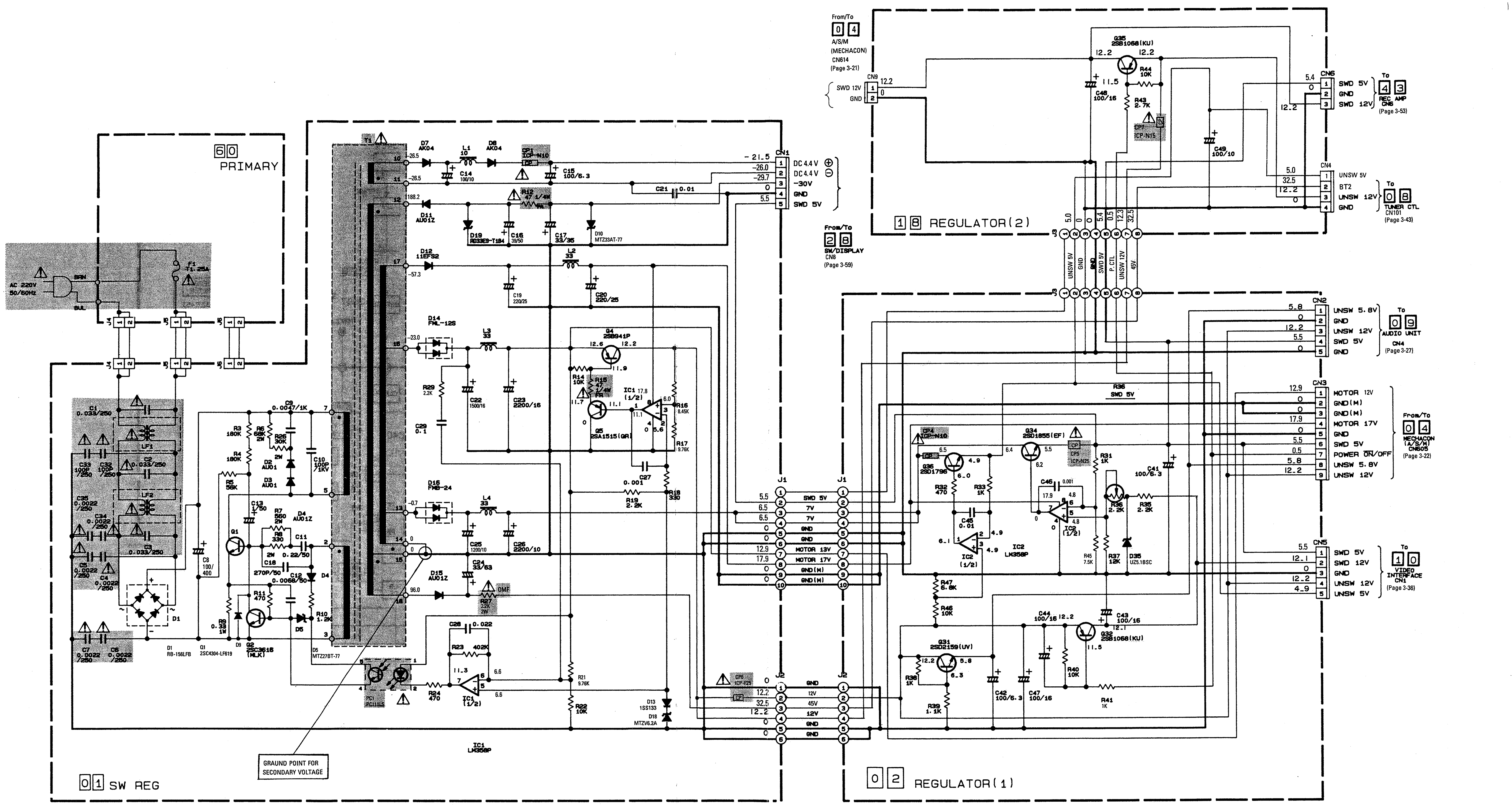
3.6 VIDEO AND VIDEO UNIT BLOCK DIAGRAMS


10 VIDEO INTERFACE
C916
COLOR BURST
C905
DOT CLOCK
TP902
TP901
IC901
IC901,IC902,X901
VIDEO OUT
VIDEO IN
ON SCREEN
IC902
S-SEP
Q38,Q39
BUFFER
Q33–Q35
AMP
Q901,Q902
ES
PROG
TP226
Y COMB-2
Q201
EQ201
EQ
R206
Y COMB GAIN
Q205
BPF
BPF202
AMP
Q203,Q204
BUFFER
Q209
R231
Y COMB-3
SWD 5V
R60
D46
BB
Q21
LC1
TRAP
Q23
BUFFER
Q22
EE
D16
R71
SPCL PB
D17
AV2
D503
Q502
COMP IN
R502
SWD 5V
D501
From 07 TUNER
CN2
PAL TV IN
From 37 SW/JACK CN5
<FRONT INPUT>
V IN
SW E
SW D
SW C
SW B
SW A
LOGIC
IC2
IC501
C57
IC1
AGC AMP
MUTE4
SW19
SJBB
SW18
SYNC SEP 2
CL
PULSE GEN
KP GEN
SW6
SW8
SW7
SW1
SW2
SW3
SW5
H,M,L–EE–S
M,L–EE–S
H–EE–S,PB
EE–C,BB
MIX2
TEXT,BB
SW9
TEXT BB
H,M
TEXT
SW4
MIX1
SW20
SW13
EE–C
TEXT
S IN
From/To 10 TERMINAL (VIDEO I.)
<REAR INPUT>
MUTE
IC3
C65
R36
EE LEVEL
C71
AGC DET
SW11
SW10
SW12
OPEN
EE–C
PB,EE–S
SW14
PB
SW15
EE
LOGIC
HDM NR
SW17
SJBB
MUTE 3
MUTE 5
PB,EE–S
PRG,BB
SW16
SYNC SEP 1
PULSE GEN
PICTURE MUTE
V PULSE
R73
D59
S OUT
Q9
TP210
C OUT
Q10,Q61
PERI
AV1
C OUT
Y/V OUT
V IN
Q11
Q15
TP1
Y OUT
Q14
IC7
COMP OUT
TP10
VIDEO OUT
AV2
C IN
From/To 06 TERMINAL
CN3
RF VIDEO OUT
To RF CONV.
Q12
EQ1
Q13
J101
PB COLOR
J102
REC Y
COLOR OUT
TP232
TP231
IC201
BPF201
EQ201
Q206
DL201
Y/C SEPERATOR
R234
L203
R234,L203
2H DELAY COLOR
R215
R219
R215,R219
Y COMB
Y COMB-1
TP225
Y OUT
R64
R63
Q49
VHS
S VHS PB Y LEVEL
VHS PB Y LEVEL
PB Y LEVEL
REC COLOR
PB Y

05 VIDEO UNIT


Q525
BUFFER
EQ501
EQ
LPF501
LPF
Q524
BUFFER
Q521
PHASE SPLITTER
L515,C543
FMA TRAP
L514,C541
H TRAP
Q520
BUFFER
CN501
PB COLOR
REC COLOR
From/To 4 3
REC AMP
CN2
DL501
2H DL
Q501
BUFFER
BPF501
BPF
BPF502
BPF
TP521
C512
C513
R514
IC503
SPCL PB
VHS
ES
Q506
PB COLOR
REC Y
CN401
CN402
BUFFER
Q517
ES
PILOT BLANKING
PB COL KILLER
R–Y INV
PHASE SHIFT
DET 1
DET 2
PILOT DET
DELAY'D SYNC
PULSE GEN
ATT
AGC DET
B.C C.F DRIVE AMP
VCA
PILOT ADDER PB: TH
REC LPF
B.E
MAIN CONV
AUTO BAL
CHROMA VCA
REC KILLER
BURST DET
4 PHASE GEN
SUB CONV
321Fh/320Fh VCO
REC APC PB DISCRI
APC P.D
LP REC SP
APC DET SW
2 PHASE FSC
CR DET
BURST COLOR P.D
COMP
2FH VCO
FSC GEN
CR DET
X'TAL OSC
3Fsc DET
IC501
SPCL PB, VHS
COLOR ROT
C524
REC APC FILTER
REC/PB APC FILTER
R526,C521
C523
Q515
SPCL PB
ES
C529
EE
TP526
VHS
C527
TP501
TP506
VXO
COLOR DET FILTER
R533,C528
X501
CF
CF501
BUFFER
Q516
3Fsc
IC404
ADJUST CONTROL
REC COLOR
PB Y
Q408
LP
EE
LPF402
LPF
LPF401
LPF
R416
SUB EMP INPUT LEVEL
Q409
BUFFER
TP439
C420
IC402
1HDL
AMP
Q401–Q403
TP421
Q404
BUFFER
LPF403
LPF
R444
YNR LEVEL
Q407
BUFFER
S-VHS
ES
Q411
TP434
DEEMP FILTER
R432,R453
C439,C438
C454,L412
S VHS NONLINEAR EMPHASIS/DEEMPHASIS
YNR
VHS
SP: TH
EP: ON
S VHS: TH
CLAMP
S VHS CAR/DEV & W/D CLIP
VHS CAR/DEV & W/D CLIP
FREQ MOD
LEVEL ADJ
HPF
S VHS
PB ONLY
VIDEO APT
DETAIL ENHANCER
VHS: ON
S VHS: TH
IC401
DOC
SW5
MAIN EMP
CAR INT
REC
PB
CLAMP
SW14
SW3
SW6
SW4
SW8
NLN EMP/DE EMP
VHS: ON
S VHS: TH
SW12
ANR
VHS: ON
S VHS: OFF
SYNC EXP
AGC DET
SW2
SW13
SUB LPF
FREQ DEMOD
DOUBLE LIMITER
DOC DET
SW1
SUB CLAMP
SYNC SEP
DEEMP & MUTE
TH: THROUGH
LOGIC
EDIT
REC/PB
1H DL: M
CN504
REC FM
PB FM
From/To 4 3
REC AMP
CN3
C433
SWD 5V
COL ROT
C438
D407
SP
R419
YNR PULSE
V APT CTL
R422
SWD 5V
D404
EE
SYNC OUT
SWD 5V
IC406
VHS
DEEMP FILTER
R428,R429,R430
C429,C430,C431
L410,L411
Q413
S-VHS
ES
I
J
K
L
M
N
O
P

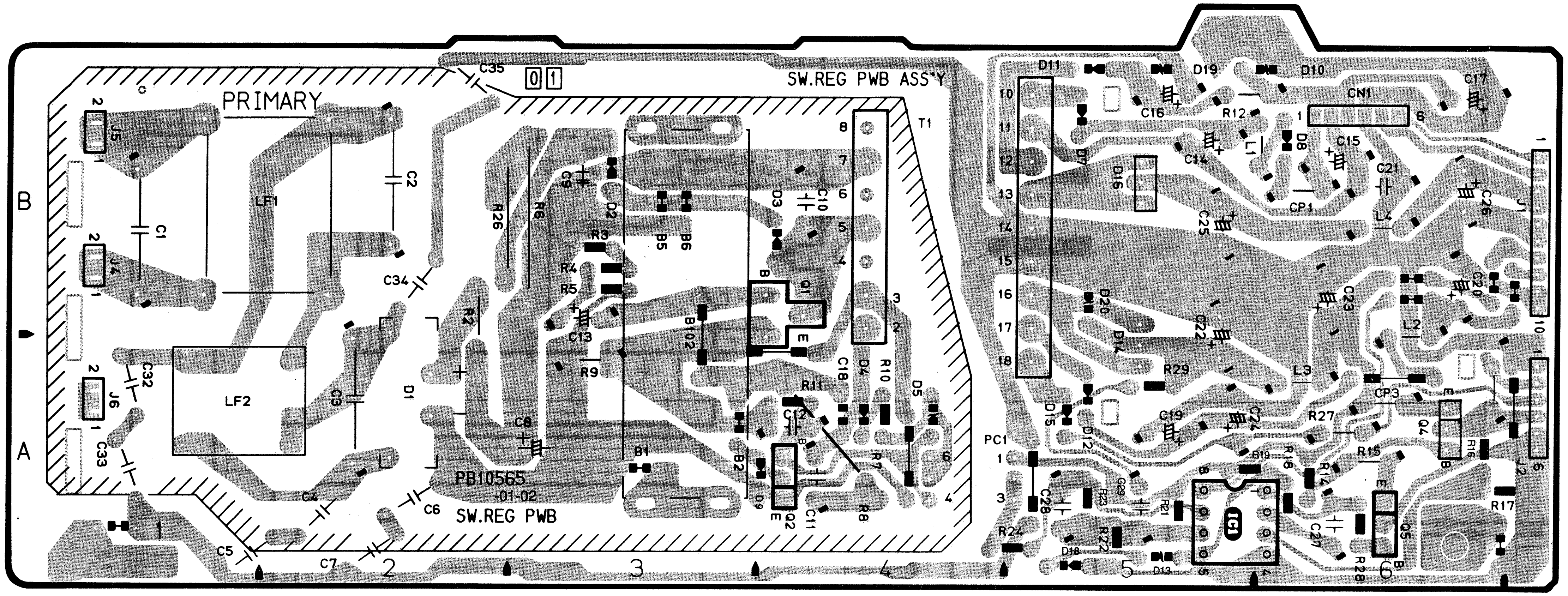
3.7 SWITCHING REGULATOR, REGULATOR(1) AND (2) SCHEMATIC DIAGRAMS



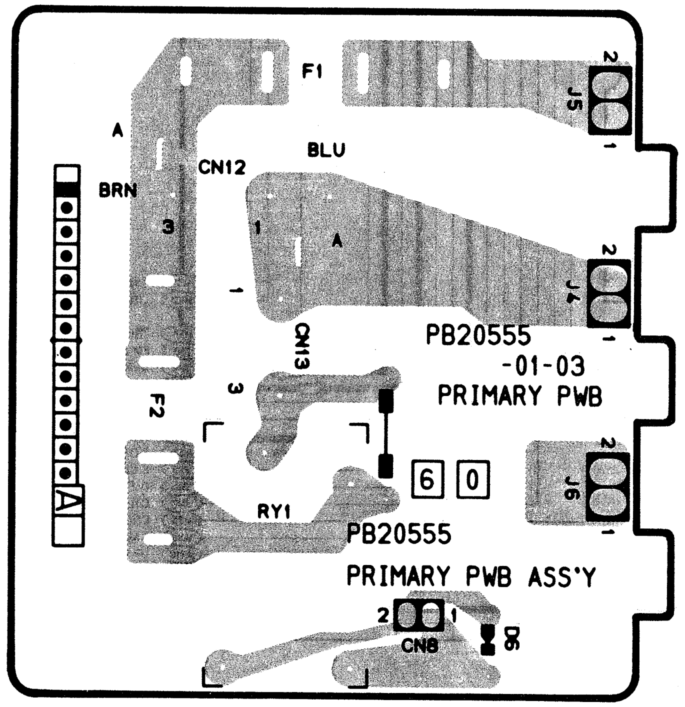
60 PRIMARY
AC 220V 50/60Hz
BRN
BUL
F1 T1.25A
J4
J5
J6
LF1
LF2
C1 0.033/250
C2 0.033/250
C3 0.033/250
C4 0.0022/250
C5 0.0022/250
C6 0.0022/250
C7 0.0022/250
C8 100/400
D1
D1 RB-156LFB
Q1 2SC4304-LF619
Q2 2SC3616 (MLK)
T1
D7 AK04
L1 10
D8 AK04
CP1 ICP-N10
C14 100/10
C15 100/6.3
R12 47 1/4W
D11 AU01Z
D19 RD33E9-T1B4
C16 39/50
C17 33/35
D10 MTZ33AT-77
D12 11EFS2
L2 33
C19 220/25
C20 220/25
D14 FML-12S
L3 33
R29 2.2K
C22 1500/16
C23 2200/16
C29 0.1
Q4 2SB941P
R14 10K
R15 47 1/4W
Q5 2SA1515(QR)
IC1 (1/2)
R16 8.45K
R17 9.76K
C27 0.001
R19 2.2K
R18 330
D16 FMB-24
L4 33
C25 1200/10
C26 2200/10
C24 33/63
D15 AU01Z
R27 2.2K 2W
C28 0.022
R23 402K
IC1 (1/2)
R24 470
PC1 PC111LS
R21 9.76K
R22 10K
D13 1SS133
D18 MTZV6.2A
IC1 LM358P
D5 MTZ27BT-77
GRAUND POINT FOR SECONDARY VOLTAGE
01 SW REG
CN1
DC 4.4V ⊕
DC 4.4V ⊖
-30V
GND
SWD 5V
J1
SWD 5V
7V
7V
GND
GND
MOTOR 13V
MOTOR 17V
GND(M)
GND(M)
J2
GND
12V
45V
12V
GND
GND
From/To 04 A/S/M (MECHACON) CN614 (Page 3-21)
CN9
SWD 12V
GND
Q35 2SB1068(KU)
R44 10K
C48 100/16
R43 2.7K
CP7 ICP-N15
C49 100/10
CN6
SWD 5V
GND
SWD 12V
To 43 REC AMP CN6 (Page 3-53)
CN4
UNSW 5V
BT2
UNSW 12V
GND
To 08 TUNER CTL CN101 (Page 3-43)
18 REGULATOR(2)
From/To 28 SW/DISPLAY CN8 (Page 3-59)
J3
UNSW 5V
GND
GND
SWD 5V
P. CTL
UNSW 12V
45V
CN2
UNSW 5.8V
GND
UNSW 12V
SWD 5V
GND
To 09 AUDIO UNIT CN4 (Page 3-27)
CN3
MOTOR 12V
GND(M)
GND(M)
MOTOR 17V
GND
SWD 5V
POWER ON/OFF
UNSW 5.8V
UNSW 12V
From/To 04 MECHACON (A/S/M) CN605 (Page 3-22)
R36 SWD 5V
CP4 ICP-N10
Q36 2SD1796
R32 470
R33 1K
Q34 2SD1655(EF)
CP5 ICP-N25
R31 1K
C41 100/6.3
C46 0.001
C45 0.01
IC2 (1/2)
IC2 LM358P
R36 2.2K
R35 2.2K
R45 7.5K
R37 12K
D35 UZ5.1BSC
R47 6.8K
R46 10K
C44 100/16
C43 100/16
Q32 2SB1068(KU)
Q31 2SD2159(UV)
R38 1K
R39 1.1K
C42 100/6.3
C47 100/16
R40 10K
R41 1K
CP6 ICP-F25
CN5
SWD 5V
SWD 12V
GND
UNSW 12V
UNSW 5V
To 10 VIDEO INTERFACE CN1 (Page 3-36)
02 REGULATOR(1)

3.8 SWITCHING REGULATOR, REGULATOR(1), (2) AND PRIMARY CIRCUIT BOARDS

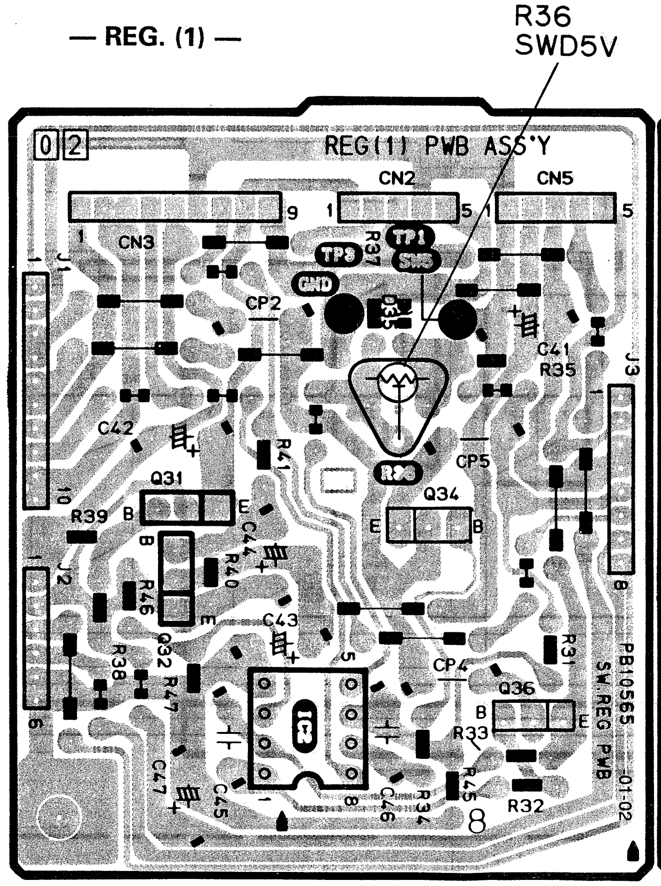
— SWITCHING REG. —


SW.REG PWB ASS'Y
PRIMARY
PB10565
-01-02
SW.REG PWB
01
T1
LF1
LF2
J5
J4
J6
J1
J2
CN1
IC1
Q1
Q2
Q4
Q5
PC1
CP1
CP3
L1
L2
L3
L4
D11
D19
D10
B
A
1
2
3
4
5
6

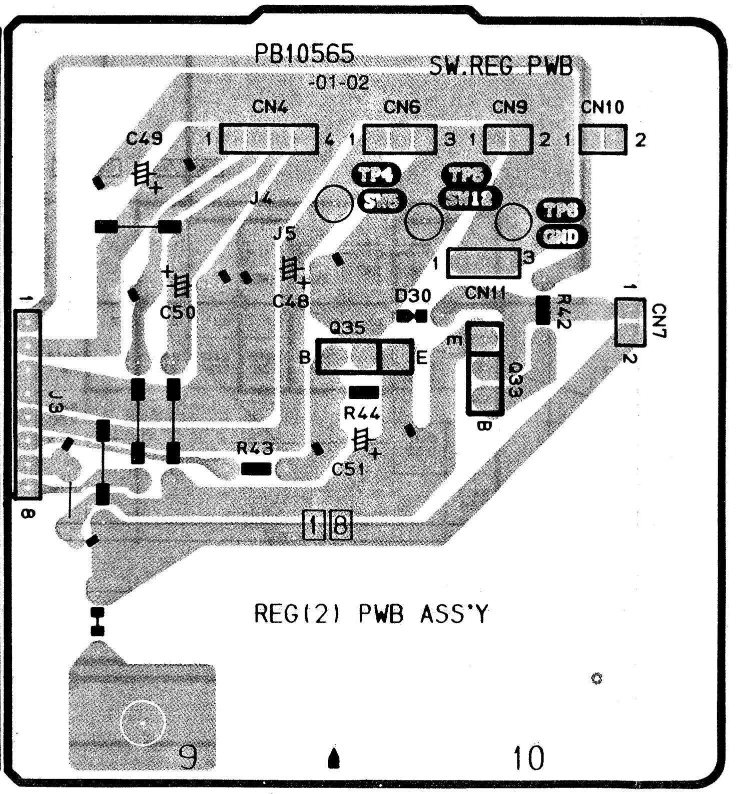
— PRIMARY —


F1
F2
BLU
BRN
CN12
CN13
CN8
RY1
D6
J5
J4
J6
PB20555
-01-03
PRIMARY PWB
60
PB20555
PRIMARY PWB ASS'Y
A

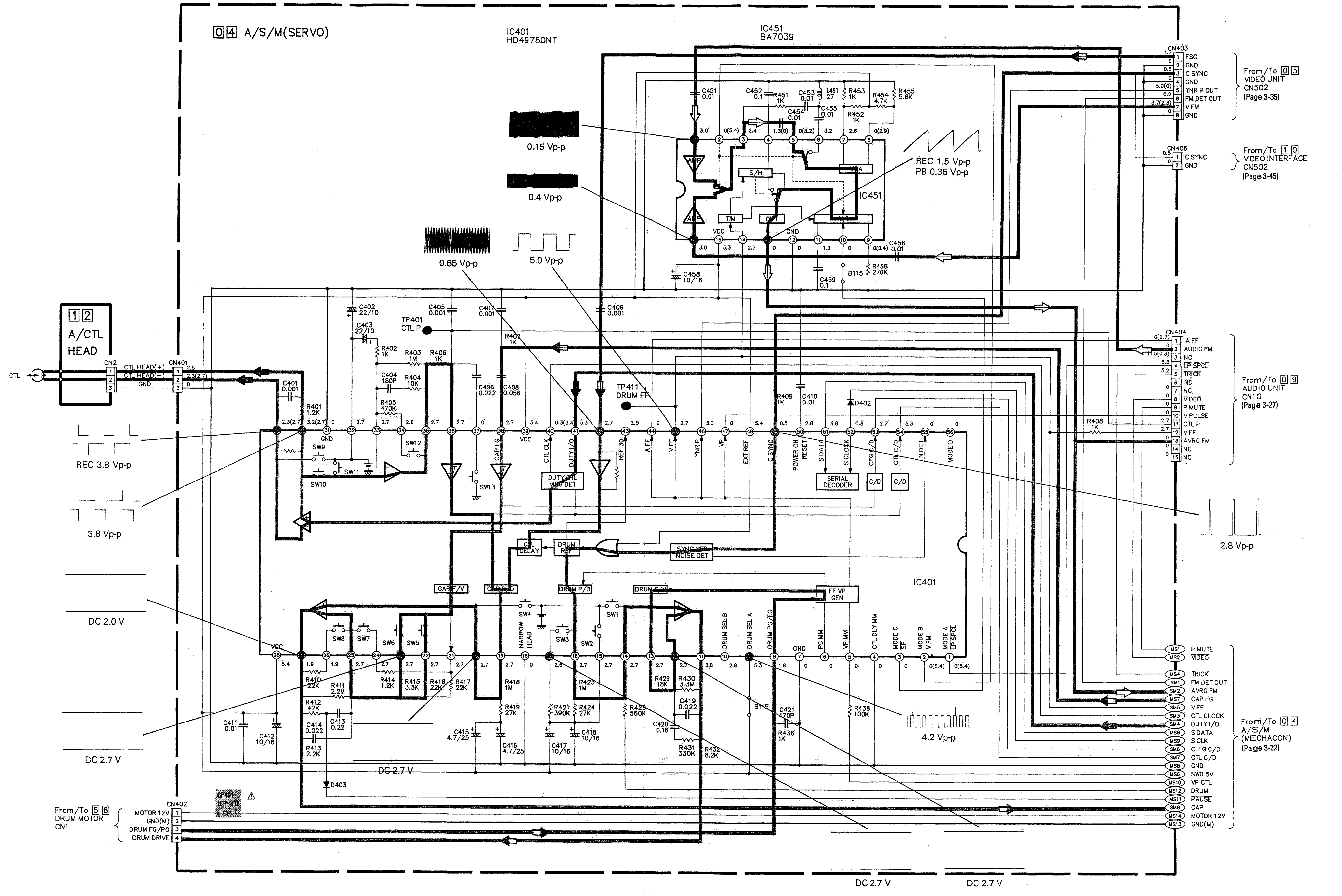
— REG. (1) —


R36
SWD5V
02
REG(1) PWB ASS'Y
CN2
CN3
CN5
CP2
CP4
CP5
TP1
TP2
SW5
GND
J1
J2
J3
Q31
Q32
Q34
Q36
IC3
PB10565 -01-02 SW.REG PWB
7
8

— REG. (2) —

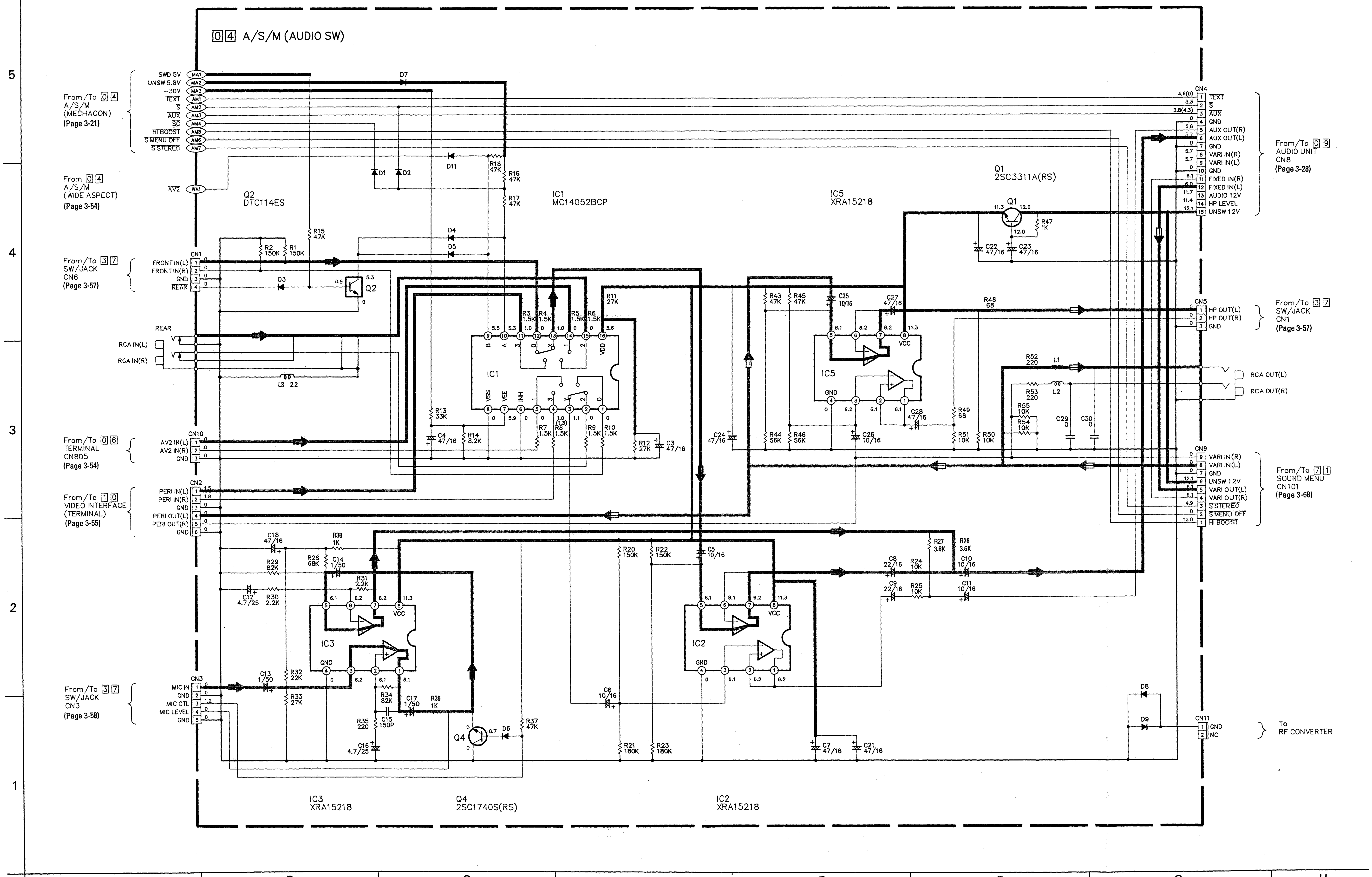

PB10565
-01-02
SW.REG PWB
CN4
CN6
CN9
CN10
CN11
CN7
TP4
TP6
TP3
SW5
SW12
GND
J3
J4
J5
Q35
Q33
D30
18
REG(2) PWB ASS'Y
9
10

3.9 SERVO SCHEMATIC DIAGRAM



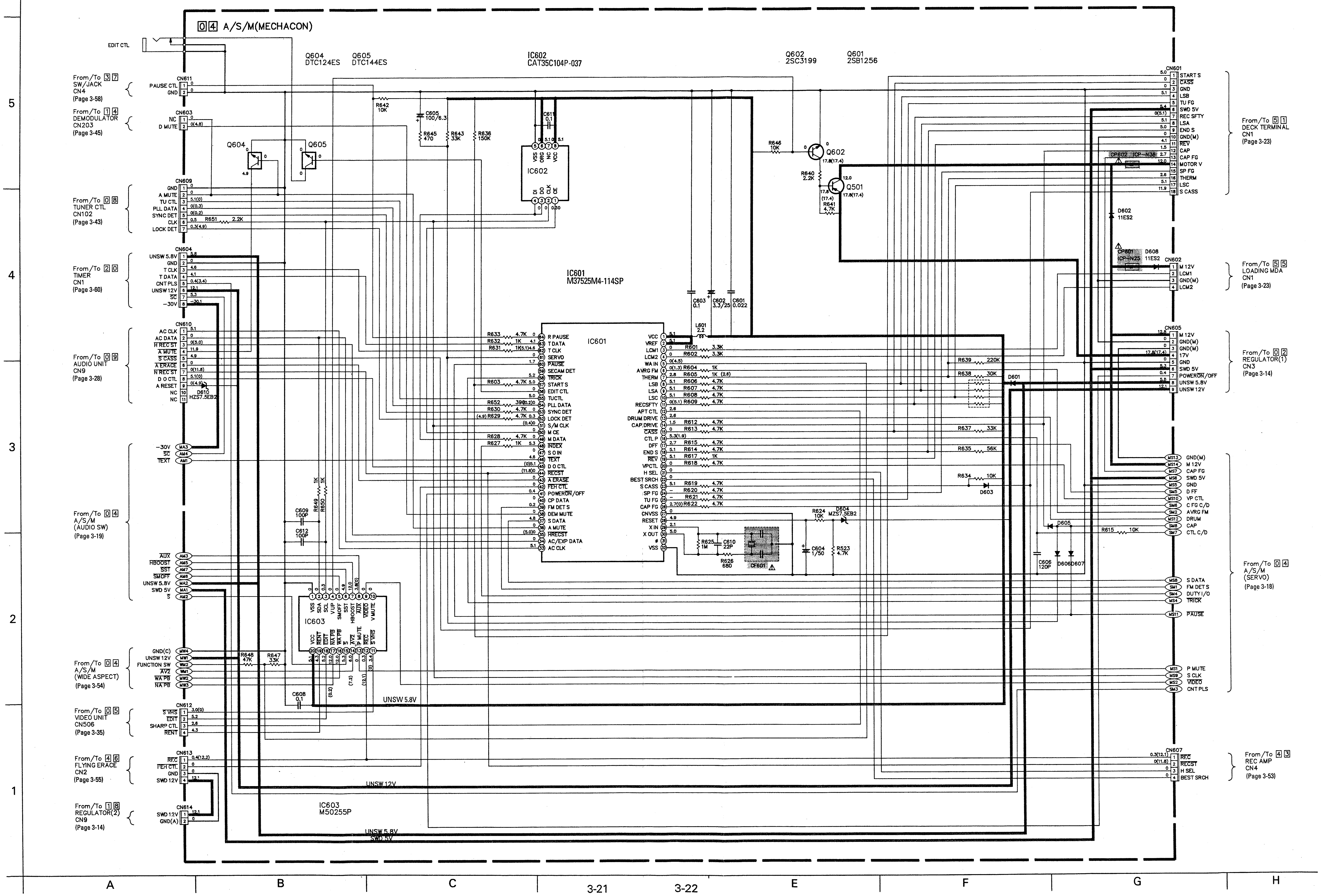
04 A/S/M(SERVO)
IC401
HD49780NT
IC451
BA7039
0.15 Vp-p
0.4 Vp-p
0.65 Vp-p
5.0 Vp-p
REC 1.5 Vp-p
PB 0.35 Vp-p
12
A/CTL
HEAD
CTL
CN2
CN401
CTL HEAD(+)
CTL HEAD(−)
GND
TP401
CTL P
TP411
DRUM FF
REC 3.8 Vp-p
3.8 Vp-p
DC 2.0 V
DC 2.7 V
2.8 Vp-p
4.2 Vp-p
VCC
GND
CTL CLK
DUTY I/O
REF 30
A FF
V FF
YNR P
VP
EXT REF
C SYNC
POWER ON RESET
S DATA
S CLOCK
CFG C/D
CTL C/D
N DET
MODE D
DUTY CTL
VISS DET
SERIAL DECODER
C/D
CTL DELAY
DRUM REF
SYNC SEP NOISE DET
CAP F/V
CAP P/D
DRUM P/D
DRUM F/V
FF VP GEN
NARROW HEAD
DRUM SEL B
DRUM SEL A
DRUM PG/FG
PG MM
VP MM
CTL DLY MM
MODE C SP
MODE B V FM
MODE A LP SPCL
CAP FG
S/H
TIM
OUT
VCA
AMP
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SW11
SW12
SW13
D402
D403
B115
L451
CP401
ICP-N15
CN402
From/To 58
DRUM MOTOR
CN1
MOTOR 12V
GND(M)
DRUM FG/PG
DRUM DRIVE
CN403
FSC
GND
C SYNC
GND
YNR P OUT
FM DET OUT
V FM
GND
From/To 05
VIDEO UNIT
CN502
(Page 3-35)
CN406
C SYNC
GND
From/To 10
VIDEO INTERFACE
CN502
(Page 3-45)
CN404
A FF
AUDIO FM
NC
LP SPCL
TRICK
NC
NC
VIDEO
P MUTE
V PULSE
CTL P
V FF
AVRG FM
NC
NC
From/To 09
AUDIO UNIT
CN10
(Page 3-27)
P MUTE
VIDEO
TRICK
FM DET OUT
AVRG FM
CAP FG
V FF
CTL CLOCK
DUTY I/O
S DATA
S CLK
C FG C/D
CTL C/D
GND
SWD 5V
VP CTL
DRUM
PAUSE
CAP
MOTOR 12V
GND(M)
From/To 04
A/S/M
(MECHACON)
(Page 3-22)
C401 0.001
R401 1.2K
C402 22/10
C403 22/10
R402 1K
R403 1M
R406 1K
C404 180P
R404 10K
R405 470K
C405 0.001
C406 0.022
C407 0.001
C408 0.056
R407 1K
C409 0.001
R409 1K
C410 0.01
R408 1K
C451 0.01
C452 0.1
R451 1K
C453 0.01
C454 0.01
C455 0.01
R453 1K
R452 1K
R454 4.7K
R455 5.6K
C456 0.01
R456 270K
C458 10/16
C459 0.1
R410 22K
R411 2.2M
R412 47K
C413 0.22
C414 0.022
R413 2.2K
R414 1.2K
R415 3.3K
R416 22K
R417 22K
R418 1M
R419 27K
C411 0.01
C412 10/16
C415 4.7/25
C416 4.7/25
C417 10/16
C418 10/16
R421 390K
R424 27K
R423 1M
R428 560K
R429 18K
R430 3.3M
C419 0.022
C420 0.18
R431 330K
R432 8.2K
C421 470P
R436 1K
R438 100K
A
B
C
D
E
F
G
H
1
2
3
4
5
6

3.10 AUDIO SW SCHEMATIC DIAGRAM



04 A/S/M (AUDIO SW)
From/To 04 A/S/M (MECHACON) (Page 3-21)
SWD 5V
UNSW 5.8V
-30V
TEXT
S
AUX
SC
HI BOOST
S MENU OFF
S STEREO
From 04 A/S/M (WIDE ASPECT) (Page 3-54)
AV2
From/To 37 SW/JACK CN6 (Page 3-57)
FRONT IN(L)
FRONT IN(R)
GND
REAR
REAR
RCA IN(L)
RCA IN(R)
From/To 06 TERMINAL CN805 (Page 3-54)
AV2 IN(L)
AV2 IN(R)
From/To 10 VIDEO INTERFACE (TERMINAL) (Page 3-55)
PERI IN(L)
PERI IN(R)
PERI OUT(L)
PERI OUT(R)
From/To 37 SW/JACK CN3 (Page 3-58)
MIC IN
MIC CTL
MIC LEVEL
Q2 DTC114ES
IC1 MC14052BCP
IC5 XRA15218
Q1 2SC3311A(RS)
IC3 XRA15218
Q4 2SC1740S(RS)
IC2 XRA15218
From/To 09 AUDIO UNIT CN8 (Page 3-28)
TEXT
S
AUX
GND
AUX OUT(R)
AUX OUT(L)
VARI IN(R)
VARI IN(L)
FIXED IN(R)
FIXED IN(L)
AUDIO 12V
HP LEVEL
UNSW 12V
From/To 37 SW/JACK CN1 (Page 3-57)
HP OUT(L)
HP OUT(R)
RCA OUT(L)
RCA OUT(R)
From/To 71 SOUND MENU CN101 (Page 3-68)
VARI OUT(L)
VARI OUT(R)
S STEREO
S MENU OFF
HI BOOST
To RF CONVERTER
CN1
CN2
CN3
CN4
CN5
CN9
CN10
CN11
A
B
C
D
E
F
G
H
1
2
3
4
5
6

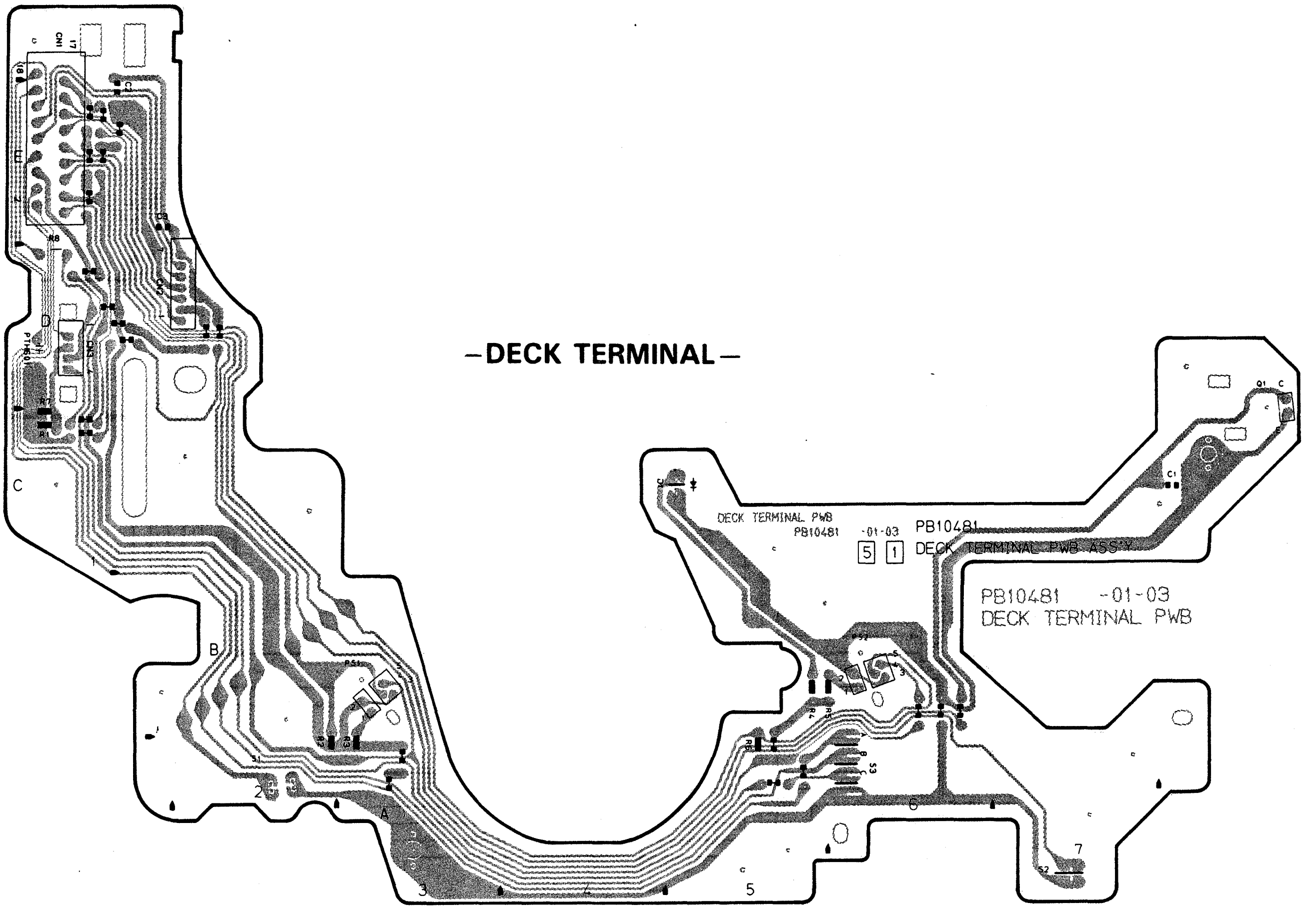
3.11 MECHACON SCHEMATIC DIAGRAM



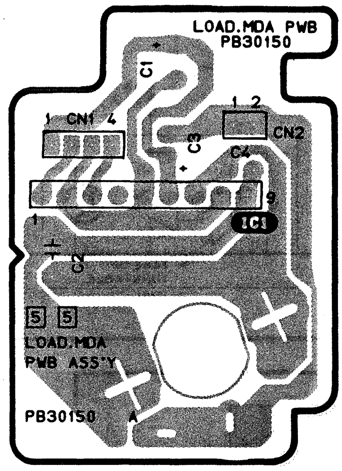
04 A/S/M(MECHACON)
EDIT CTL
Q604 DTC124ES
Q605 DTC144ES
IC602 CAT35C104P-037
Q602 2SC3199
Q601 2SB1256
IC601 M37525M4-114SP
IC603 M50255P
From/To 37 SW/JACK CN4 (Page 3-58)
CN611 PAUSE CTL GND
From/To 14 DEMODULATOR CN203 (Page 3-45)
CN603 NC D MUTE
From/To 08 TUNER CTL CN102 (Page 3-43)
CN609 GND A MUTE TU CTL PLL DATA SYNC DET CLK LOCK DET
From/To 20 TIMER CN1 (Page 3-60)
CN604 UNSW 5.8V GND T CLK T DATA CNT PLS UNSW 12V SC −30V
From/To 09 AUDIO UNIT CN9 (Page 3-28)
CN610 AC CLK AC DATA H REC ST A MUTE S CASS A ERASE N REC ST D O CTL A RESET NC NC
D610 HZS7.5EB2
From/To 04 A/S/M (AUDIO SW) (Page 3-19)
−30V SC TEXT AUX HBOOST SST SMOFF UNSW 5.8V SWD 5V S
From/To 04 A/S/M (WIDE ASPECT) (Page 3-54)
GND(C) UNSW 12V FUNCTION SW AV2 WA PB NA PB
From/To 05 VIDEO UNIT CN506 (Page 3-35)
CN612 S VHS EDIT SHARP CTL RENT
From/To 46 FLYING ERACE CN2 (Page 3-55)
CN613 REC FEH CTL GND SWD 12V
From/To 18 REGULATOR(2) CN9 (Page 3-14)
CN614 SWD 12V GND(A)
UNSW 5.8V
UNSW 12V
UNSW 5.8V SWD 5V
CN601 START S CASS GND LSB TU FG SWD 5V REC SFTY LSA END S GND(M) REV CAP CAP FG MOTOR V SP FG THERM LSC S CASS
From/To 51 DECK TERMINAL CN1 (Page 3-23)
CP602 ICP-N38
D602 11ES2
CP601 ICP-N25 D608 11ES2
CN602 M 12V LCM1 GND(M) LCM2
From/To 55 LOADING MDA CN1 (Page 3-23)
CN605 M 12V GND(M) GND(M) 17V GND SWD 5V POWERON/OFF UNSW 5.8V UNSW 12V
From/To 02 REGULATOR(1) CN3 (Page 3-14)
GND(M) M 12V CAP FG SWD 5V GND D FF VP CTL C FG C/D AVRG FM DRUM CAP CTL C/D
S DATA FM DET S DUTY I/O TRICK PAUSE P MUTE S CLK VIDEO CNT PLS
From/To 04 A/S/M (SERVO) (Page 3-18)
CN607 REC RECST H SEL BEST SRCH
From/To 43 REC AMP CN4 (Page 3-53)
R642 10K C605 100/6.3 R645 470 R643 33K R636 150K C611 0.1
R646 10K R640 2.2K R641 4.7K
C603 0.1 C602 3.3/25 C601 0.022 L601 2.2
R601 3.3K R602 3.3K R604 1K R605 1K R606 4.7K R607 4.7K R608 4.7K R609 4.7K R612 4.7K R613 4.7K R615 4.7K R614 4.7K R617 1K R618 4.7K R619 4.7K R620 4.7K R621 4.7K R622 4.7K
R624 10K D604 MZS7.5EB2 R625 1M C610 22P R626 680 CF601 C604 1/50 R523 4.7K
R639 220K R638 30K D601 R637 33K R635 56K R634 10K D603 D605 R615 10K C606 120P D606 D607
R633 4.7K R632 1K R631 1K R603 4.7K R652 390 R630 4.7K R629 4.7K R628 4.7K R627 1K R651 2.2K
C609 100P C612 100P R649 1K R650 1K R648 47K R647 33K C608 0.1
R PAUSE T DATA T CLK SERVO PAUSE SECAM DET TRICK START S EDIT CTL TUCTL PLL DATA SYNC DET LOCK DET S/M CLK M CE M DATA INDEX S OIN TEXT D O CTL RECST A ERASE FEH CTL POWERON/OFF CP DATA FM DET S DEM MUTE S DATA A MUTE HRECST AC/EXP DATA AC CLK
VCC VREF LCM1 LCM2 WA IN AVRG FM THERM LSB LSA LSC RECSFTY APT CTL DRUM DRIVE CAP DRIVE CASS CTL P DFF END S REV VPCTL H SEL BEST SRCH S CASS SP FG TU FG CAP FG CNVSS RESET X IN X OUT VSS
A B C D E F G H
1 2 3 4 5 6

3.13 DECK TERMINAL, LOADING MDA, CASSETTE HOUSING, A/CTL HEAD CIRCUIT BOARDS

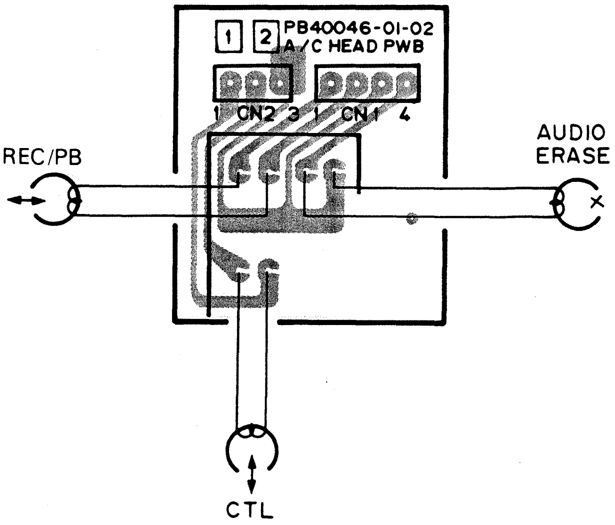
–DECK TERMINAL–


DECK TERMINAL PWB
PB10481 -01-03
PB10481
5 1 DECK TERMINAL PWB ASS'Y
PB10481 -01-03
DECK TERMINAL PWB
A
B
C
D
E
1
2
3
4
5
6
7
Q1
C1
S1
S2
S3

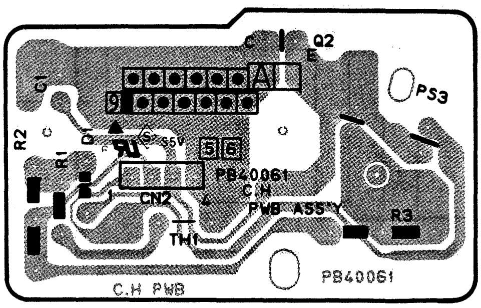
– LOADING MDA –


LOAD.MDA PWB
PB30150
C1
1 CN1 4
1 2
CN2
C3
C4
9
1
IC1
C2
5 5
LOAD.MDA
PWB ASS'Y
PB30150 A

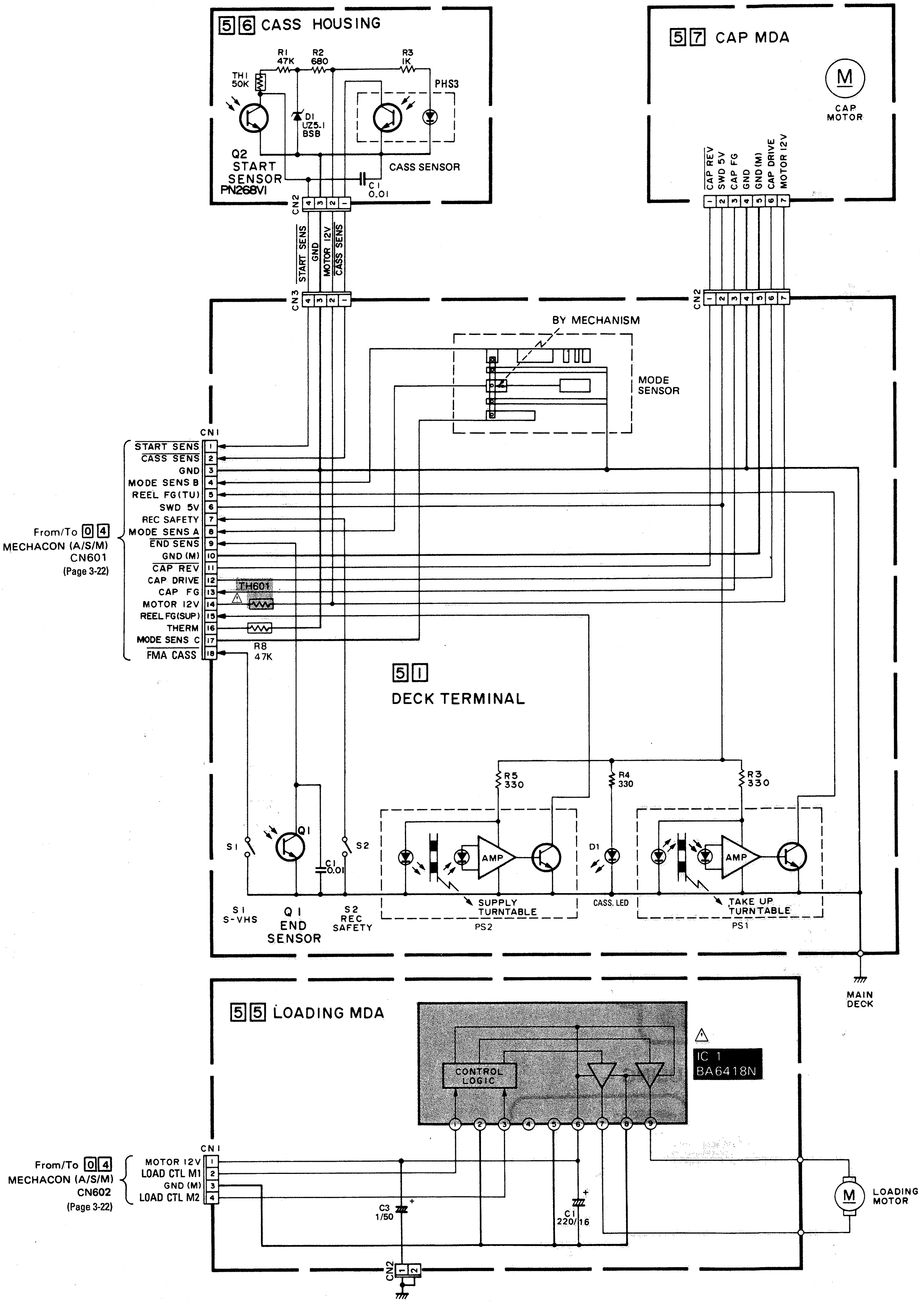
–A/CTL HEAD–


1 2 PB40046-01-02
A/C HEAD PWB
1 CN2 3 1 CN1 4
REC/PB
AUDIO
ERASE
CTL

– CASSETTE HOUSING –

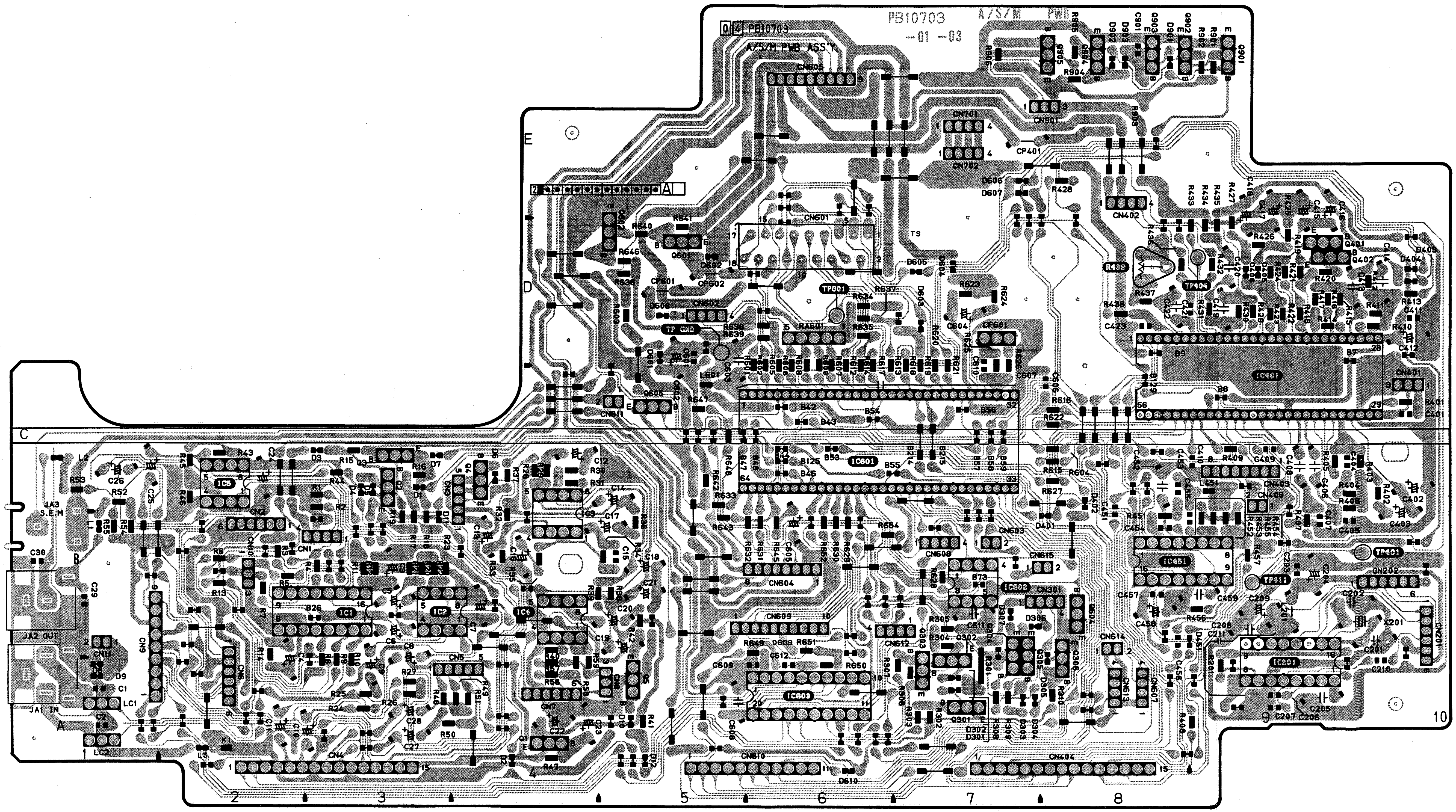

C
Q2
E
C1
A
9
PS3
R2
R1
D1
S5V
5 6
PB40061
C.H
PWB ASS'Y
1 CN2 4
TH1
R3
C.H PWB
PB40061

3.12 DECK TERMINAL, LOADING MDA, CASSETTE HOUSING AND CAPSTAN MDA SCHEMATIC DIAGRAMS

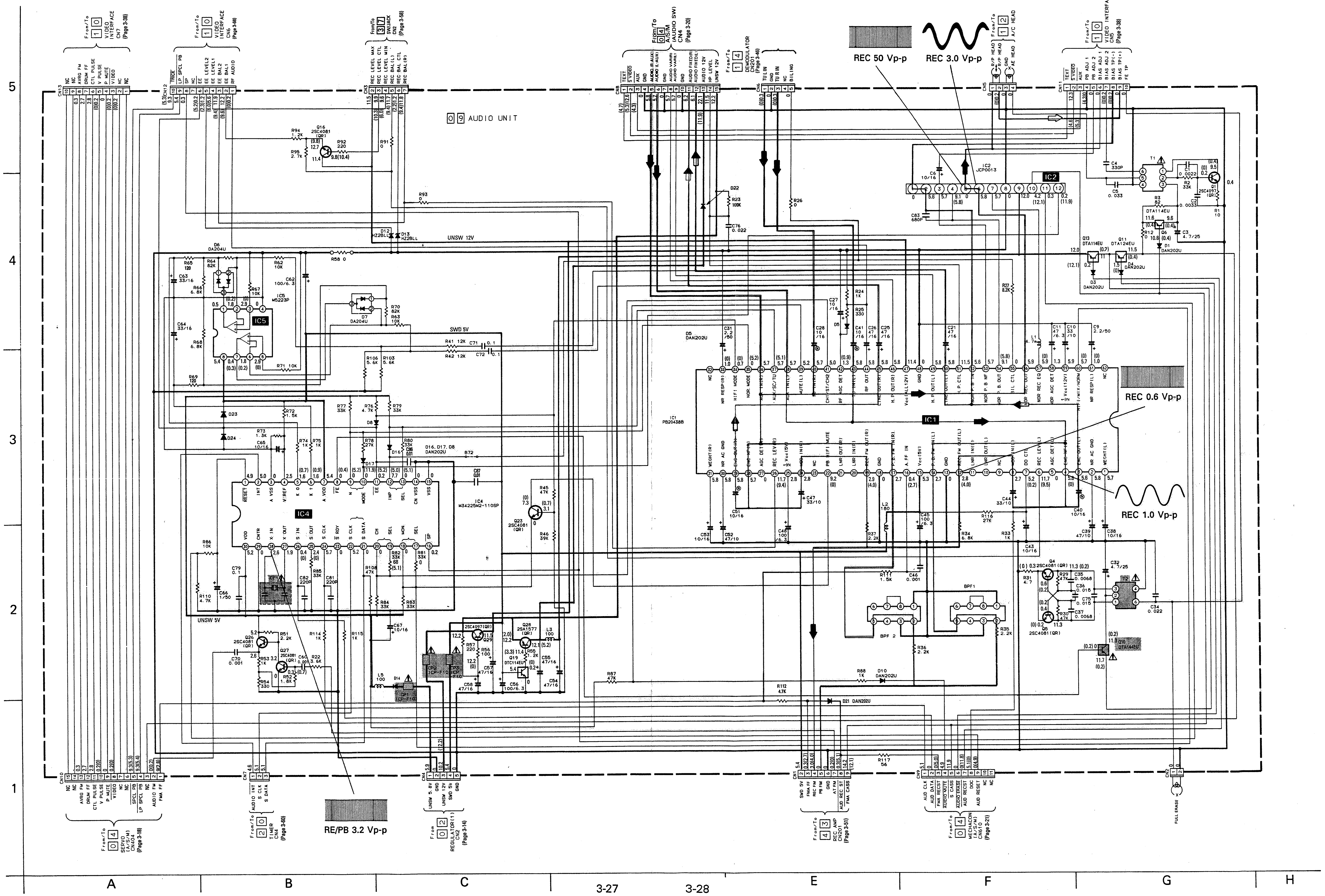


56 CASS HOUSING
R1 47K
R2 680
R3 1K
TH1 50K
PHS3
D1 UZ5.1 BSB
Q2 START SENSOR PN268VI
CASS SENSOR
C1 0.01
CN2
START SENS
GND
MOTOR 12V
CASS SENS
CN3
57 CAP MDA
M
CAP MOTOR
CAP REV
SWD 5V
CAP FG
GND
GND (M)
CAP DRIVE
MOTOR 12V
CN2
BY MECHANISM
MODE SENSOR
CN1
START SENS
CASS SENS
GND
MODE SENS B
REEL FG(TU)
SWD 5V
REC SAFETY
MODE SENS A
END SENS
GND (M)
CAP REV
CAP DRIVE
CAP FG
MOTOR 12V
REEL FG(SUP)
THERM
MODE SENS C
FMA CASS
From/To 04 MECHACON (A/S/M) CN601 (Page 3-22)
TH601
R8 47K
51 DECK TERMINAL
R5 330
R4 330
R3 330
S1
Q1
S2
C1 0.01
AMP
AMP
D1
S1 S-VHS
Q1 END SENSOR
S2 REC SAFETY
SUPPLY TURNTABLE
PS2
CASS. LED
TAKE UP TURNTABLE
PS1
MAIN DECK
55 LOADING MDA
CONTROL LOGIC
IC 1 BA6418N
1 2 3 4 5 6 7 8 9
CN1
MOTOR 12V
LOAD CTL M1
GND (M)
LOAD CTL M2
From/To 04 MECHACON (A/S/M) CN602 (Page 3-22)
C3 1/50
C1 220/16
M
LOADING MOTOR
CN2
6
5
4
3
2
1
A
B
C

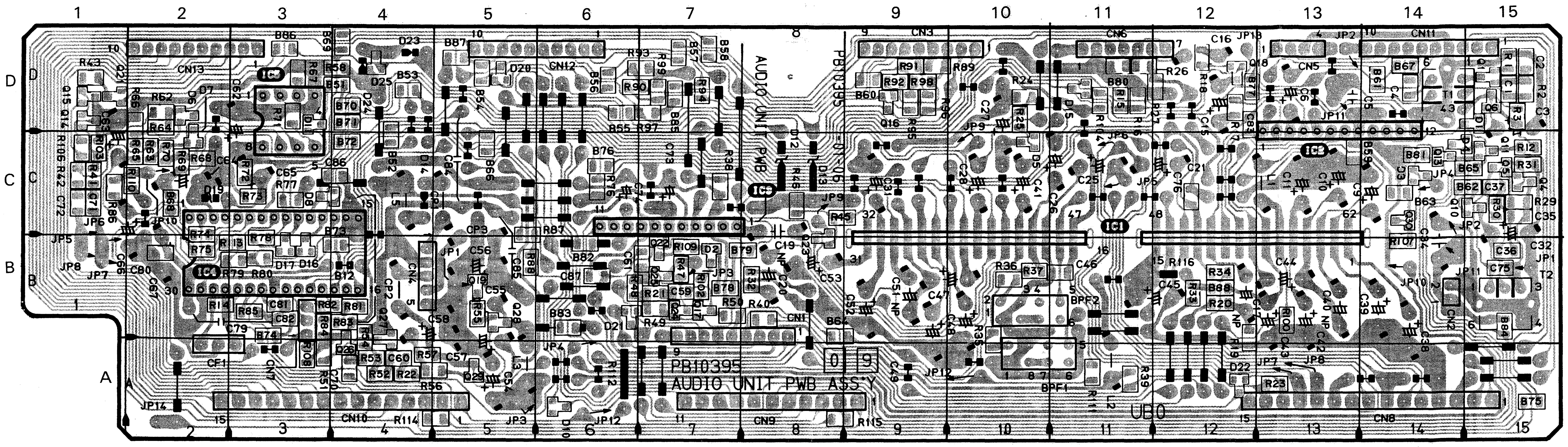
3.14 AUDIO/SERVO/MECHACON (A/S/M) CIRCUIT BOARD


PB10703 A/S/M PWB
-01 -03
PB10703
A/S/M PWB ASS'Y
CN605
CN701
CN702
CN901
CP401
CN402
CN601
CN602
CP601
CP602
TP301
TF GND
RA601
CF601
IC401
CN401
CN611
Q605
Q601
Q602
Q401
Q402
TP404
IC601
IC5
IC3
IC1
IC2
IC4
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
JA3 S.E.M
JA2 OUT
JA1 IN
LC1
LC2
CN604
CN608
CN609
CN610
CN612
IC603
IC602
CN301
CN603
CN615
CN614
CN613
CN607
CN404
IC451
CN403
CN406
TP401
TP411
CN202
CN201
IC201
X201
A
B
C
D
E
1
2
3
4
5
6
7
8
9
10

3.15 AUDIO UNIT SCHEMATIC DIAGRAM


09 AUDIO UNIT
From/To 10 VIDEO INTERFACE CN7 (Page 3-38)
From/To 10 VIDEO INTERFACE CN6 (Page 3-38)
From/To 37 SW/JACK CN2 (Page 3-58)
From/To 04 A/S/M AUDIO SW) CN4 (Page 3-20)
From/To 14 DEMODULATOR CN201 (Page 3-46)
From/To 12 R/P HEAD A/C HEAD
From/To 10 VIDEO INTERFACE CN5 (Page 3-38)
From/To 04 SERVO (A/S/M) CN404 (Page 3-18)
From/To 20 TIMER CN4 (Page 3-60)
From 02 REGULATOR (11) CN2 (Page 3-14)
From/To 43 REC AMP CN201 (Page 3-51)
From/To 04 MECHACON (A/S/M) CN610 (Page 3-21)
FULL ERASE
REC 50 Vp-p
REC 3.0 Vp-p
REC 0.6 Vp-p
REC 1.0 Vp-p
RE/PB 3.2 Vp-p
IC1 PB20438B
IC2 JCP0013
IC4 M34225M2-110SP
IC5 M5223P
UNSW 12V
SWD 5V
UNSW 5V
BPF 1
BPF 2
T1
T2
A
B
C
D
E
F
G
H
1
2
3
4
5

3.16 AUDIO UNIT CIRCUIT BOARD


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
D
C
B
A
CN13
CN12
CN3
CN6
CN5
CN11
CN10
CN9
CN8
IC1
IC2
IC3
IC4
IC5
AUDIO UNIT PWB
PB10395
PB10395
AUDIO UNIT PWB ASS'Y
BPF1
BPF2
CF1
T1
T2
UB0

•Address of chip parts
A-1
└── Address

REF. No.	LOCATION
TRANSISTOR	
Q1	D-15
Q4	C-15
Q5	C-15
Q6	D-15
Q10	C-15
Q11	C-15
Q13	C-14
Q16	D-9
Q18	D-12
Q19	B-5
Q23	B-8
Q26	A-4
Q27	A-4
Q28	B-5
Q29	A-5

REF. No.	LOCATION
DIODE	
D1	D-15
D3	C-14
D4	C-14
D5	C-10
D6	D-2
D7	C-2
D8	C-3
D10	A-6
D16	B-3
D17	B-3
D21	B-6
D22	A-12

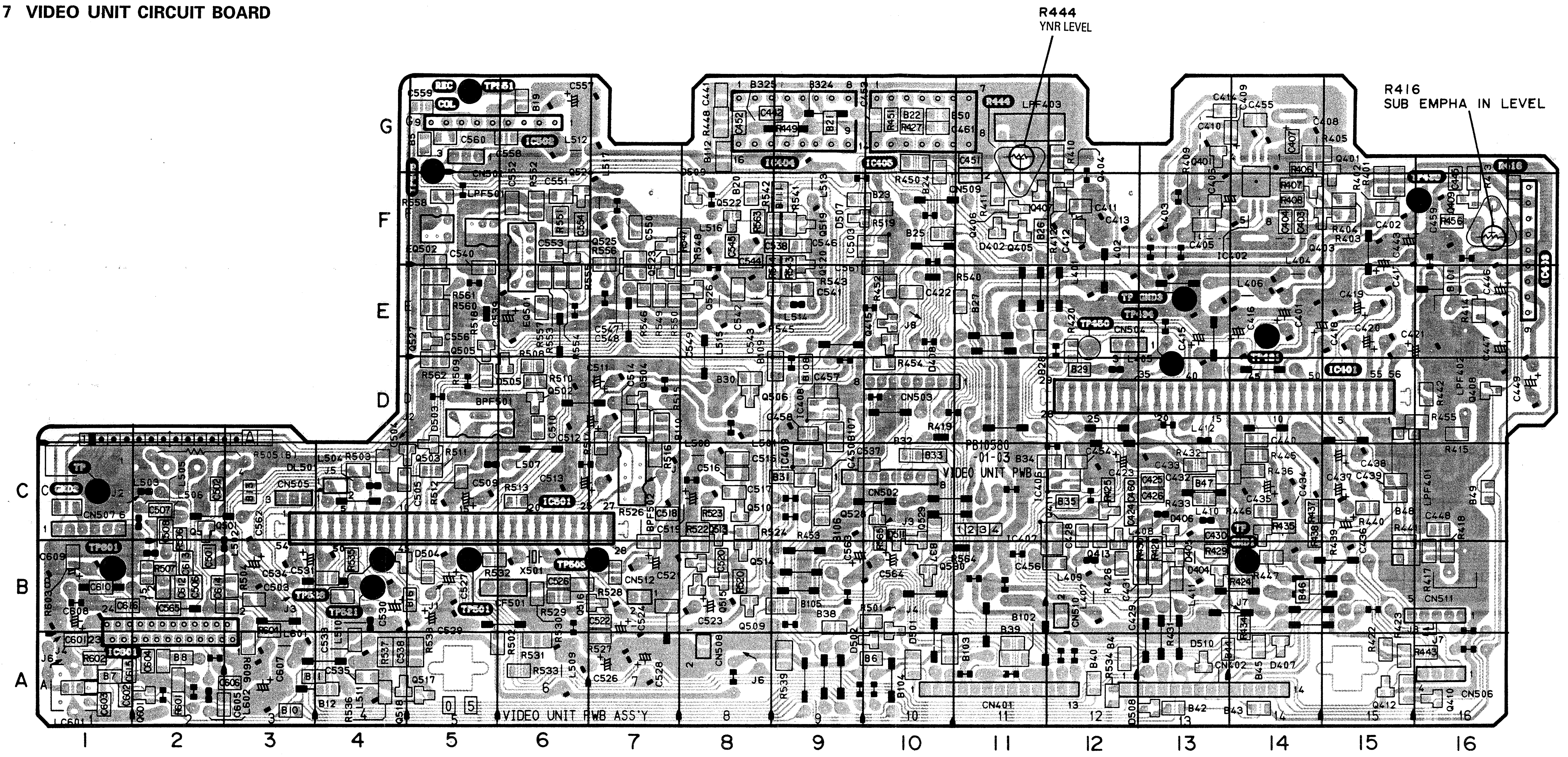
REF. No.	LOCATION
RESISTOR	
R1	D-15
R2	D-15
R3	D-15
R12	C-15
R22	A-4
R23	A-13
R24	D-10
R25	D-10
R26	D-11
R27	D-12
R29	C-15
R30	C-15
R31	C-15
R33	B-12
R34	B-12
R35	A-10
R36	B-10
R37	B-10
R41	C-1
R42	C-1
R45	B-8
R46	B-8
R51	A-3

REF. No.	LOCATION
RESISTOR	
R52	A-4
R53	A-4
R54	A-4
R55	B-5
R56	A-5
R57	A-5
R58	D-4
R62	D-2
R63	C-2
R64	C-2
R65	C-2
R66	C-2
R67	D-3
R68	C-2
R69	C-2
R70	C-2
R71	D-3
R72	C-3
R73	C-3
R74	B-2
R75	B-2
R76	C-6
R77	C-3

REF. No.	LOCATION
RESISTOR	
R78	B-3
R79	B-3
R80	B-3
R81	B-4
R82	B-4
R83	B-4
R84	B-3
R85	B-3
R86	C-1
R87	B-5
R88	B-5
R91	D-9
R92	D-9
R93	D-7
R94	D-7
R95	D-9
R103	C-1
R106	C-1
R108	A-3
R110	C-2
R111	A-11
R114	A-5
R115	A-8

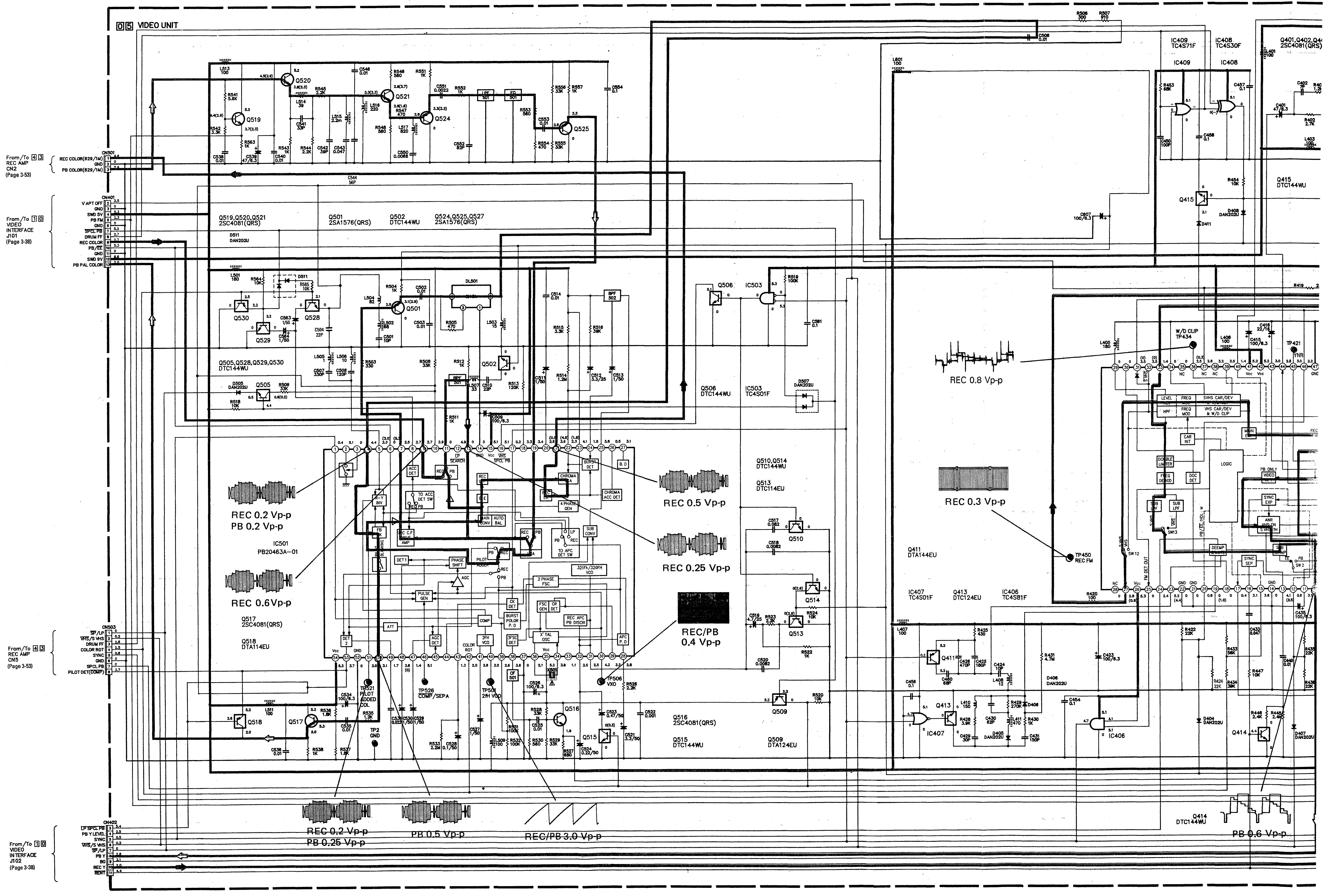
REF. No.	LOCATION
CAPACITOR	
C1	D-15
C2	D-15
C4	D-14
C35	C-15
C36	B-15
C37	C-15
C46	B-11
C60	A-4
C70	A-4
C71	C-1
C72	C-1
C75	B-15
C76	C-12
C81	B-3
C82	B-3
C83	D-12
C86	C-4
C87	B-6

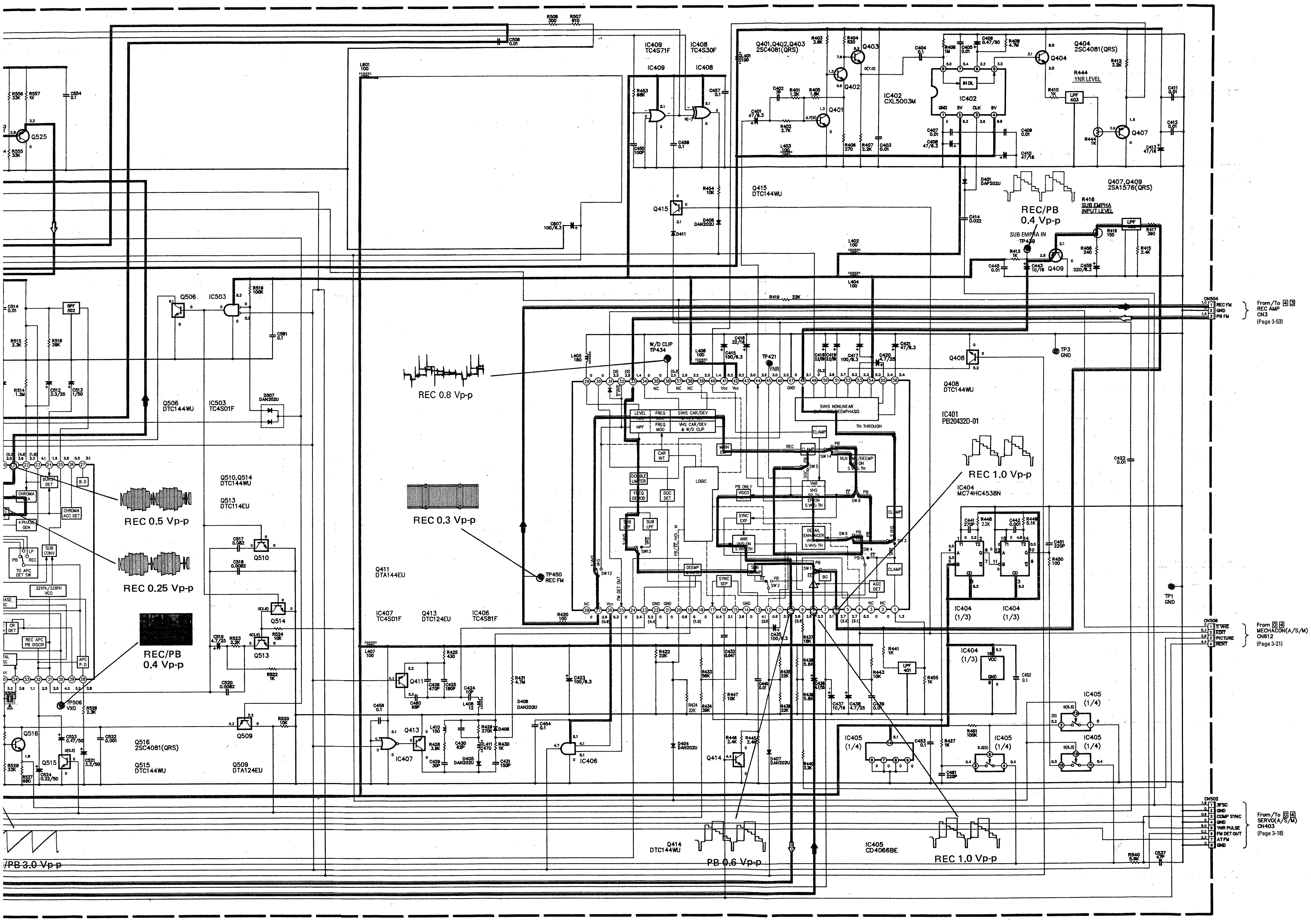
3.17 VIDEO UNIT CIRCUIT BOARD



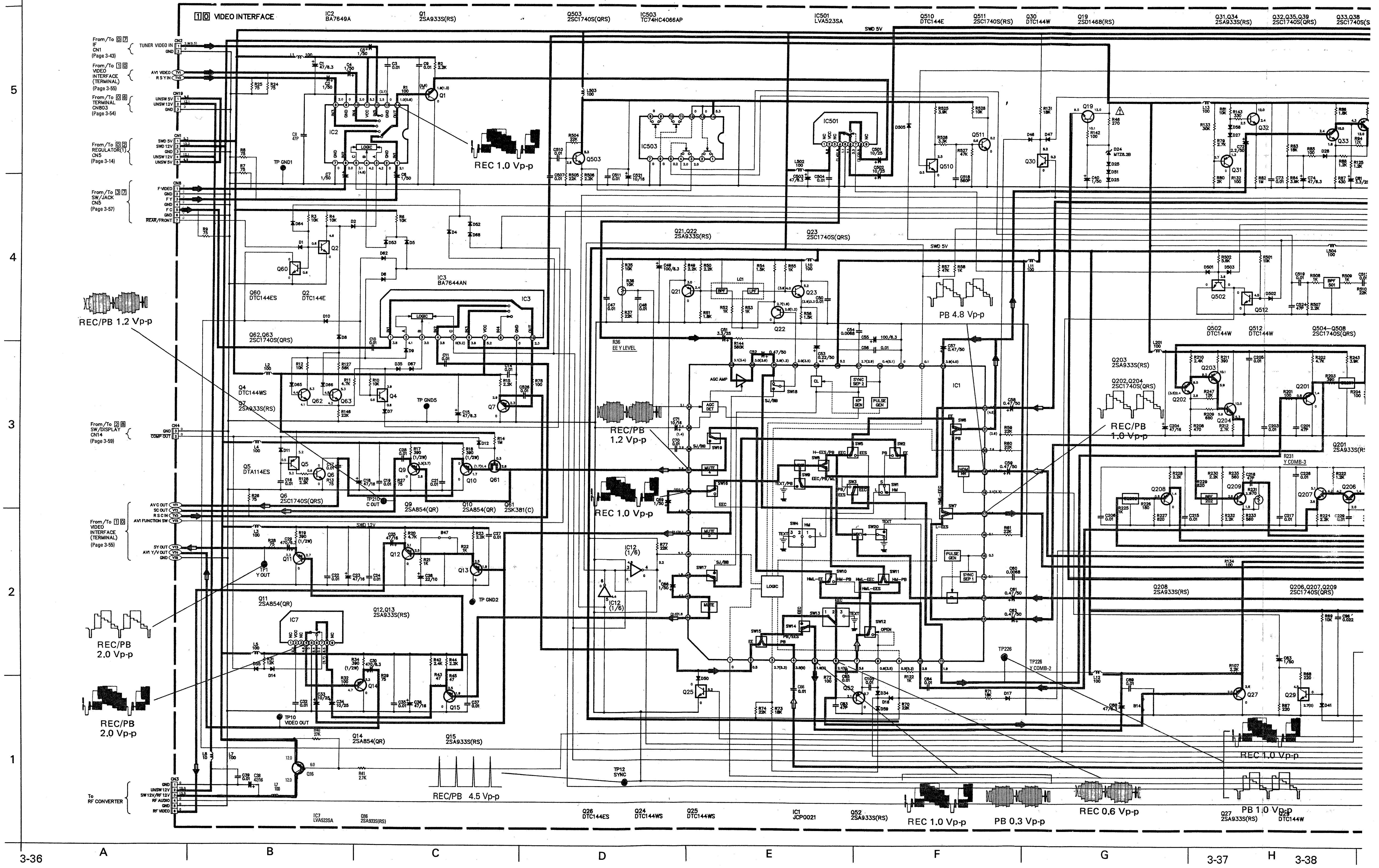
REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION
TRANSISTOR		TRANSISTOR		DIODE		RESISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR		CAPACITOR		CAPACITOR		CAPACITOR		CAPACITOR	
Q401	F-14	Q518	A-4	D401	G-13	R401	F-15	R431	B-13	R505	C-2	R536	A-4	R602	A-1	C401	E-14	C431	B-12	C461	G-10	C530	B-4	C560	G-5
Q402	F-14	Q519	F-9	D402	F-11	R402	F-15	R432	C-13	R506	B-2	R537	A-4	R603	B-1	C402	F-15	C432	C-13	C501	B-2	C531	B-3	C561	E-9
Q403	F-14	Q520	F-9	D404	B-13	R403	F-14	R433	C-13	R507	B-1	R538	A-4	R604	B-3	C403	F-14	C433	C-13	C502	B-2	C532	B-3	C562	B-3
Q404	F-11	Q521	E-7	D405	B-13	R404	F-14	R434	B-13	R508	D-6	R539	A-8	R605	B-2	C404	F-14	C434	C-14	C503	B-3	C533	A-4	C563	C-9
Q405	F-11	Q522	F-8	D406	C-13	R405	G-14	R435	C-14	R509	D-5	R540	E-10			C405	F-13	C435	C-13	C504	C-4	C534	B-3	C564	B-10
Q406	F-11	Q523	F-7	D407	A-14	R406	G-14	R436	C-13	R510	D-6	R541	F-8			C406	F-13	C436	C-14	C505	C-4	C535	A-4	C601	A-1
Q407	F-11	Q524	F-6	D408	E-9	R407	F-14	R437	C-14	R511	C-4	R542	F-8			C407	G-14	C437	C-14	C506	C-2	C536	A-4	C602	A-1
Q408	D-16	Q525	F-6	D501	B-10	R408	F-14	R438	C-14	R512	C-5	R543	E-8			C408	G-14	C438	C-14	C507	C-1	C537	C-9	C603	A-1
Q409	F-16	Q526	E-7	D502	A-9	R409	F-13	R439	C-14	R513	C-5	R544	E-8			C409	G-13	C439	C-15	C508	C-2	C538	F-8	C604	A-1
Q410	A-15	Q527	E-4	D503	D-4	R410	G-11	R440	C-15	R514	D-6	R545	E-8			C410	G-13	C440	D-13	C509	C-5	C539	E-5	C605	A-2
Q411	C-12	Q528	C-9	D504	B-4	R411	F-11	R441	C-15	R515	D-7	R546	E-7			C411	F-12	C441	G-8	C510	D-6	C540	E-5	C606	A-2
Q412	A-15	Q529	C-10	D505	D-5	R412	F-11	R442	D-15	R516	C-7	R547	F-7			C412	F-12	C442	G-8	C511	D-6	C541	E-9	C607	A-3
Q413	C-12	Q530	B-10	D507	F-9	R413	F-16	R443	A-15	R518	E-5	R548	F-7			C413	F 12	C443	F-15	C512	D-6	C542	E-8	C608	B-0
Q414	C-14	Q601	A-1	D508	A-12	R414	E-16	R444	G-11	R519	F-9	R549	E-7			C414	G-13	C444	F-16	C513	C-6	C543	E-8	C609	B-0
Q415	E-9			D509	F-7	R415	D-16	R445	C-13	R520	B-8	R550	E-7			C415	E-13	C445	F-16	C514	D-7	C544	F-8	C610	B-1
Q501	C-2			D510	A-13	R416	F-16	R446	C-14	R521	B-7	R551	F-6			C416	E-13	C446	E-16	C515	C-8	C545	F-8	C611	B-1
Q502	D-6					R417	B-15	R447	B-14	R522	C-7	R552	F-6			C417	F-15	C447	D-16	C516	C-8	C546	F-8	C612	B-2
Q503	C-4					R418	B-16	R448	G-8	R523	C-8	R553	E-6			C418	E-14	C448	C-15	C517	C-8	C547	F-7	C613	B-2
Q504	D-7					R419	D-10	R449	G-8	R524	C-8	R554	E-6			C419	E-14	C449	D-16	C518	C-7	C548	E-7	C614	B-2
Q505	E-5					R420	E-11	R450	G-10	R525	B-7	R555	E-6			C420	E-15	C450	C-9	C519	C-7	C549	E-7	C615	A-1
Q506	D-8					R421	A-15	R451	G-9	R526	C-7	R556	F-6			C421	E-15	C451	G-10	C520	B-8	C550	F-7	C616	B-1
Q509	B-8					R422	A-15	R452	E-9	R527	A-6	R557	E-6			C422	E-10	C452	G-8	C521	B-7	C551	F-6		
Q510	C-8					R423	A-15	R453	C-9	R528	B-6	R558	F-5			C423	C-12	C453	G-9	C522	B-6	C552	F-5		
Q511	B-7					R424	B-13	R454	D-9	R529	B-6	R559	F-4			C424	C-12	C454	C-12	C523	B-8	C553	F-6		
Q512	B-7					R425	C-12	R455	D-15	R530	B-6	R560	E-4			C425	C-12	C455	G-13	C524	A-7	C554	F-6		
Q513	C-8					R426	B-12	R456	F-16	R531	A-6	R561	E-4			C426	C-12	C456	B-11	C525	B-6	C555	E-4		
Q514	B-8					R427	G-10	R501	B-9	R532	B-5	R562	D-4			C427	C-12	C457	D-9	C526	A-7	C556	E-5		
Q515	B-8					R428	B-12	R502	A-5	R533	A-5	R563	F-8			C428	C-12	C458	D-9	C527	B-5	C557	G-6		
Q516	B-6					R429	B-13	R503	C-4	R534	A-12	R564	B-10			C429	B-12	C459	F-16	C528	A-7	C558	G-5		
Q517	A-4					R430	B-12	R504	B-2	R535	B-4	R601	A-2			C430	C-13	C460	C-12	C529	B-5	C559	G-4		

3.18 VIDEO UNIT SCHEMATIC DIAGRAM

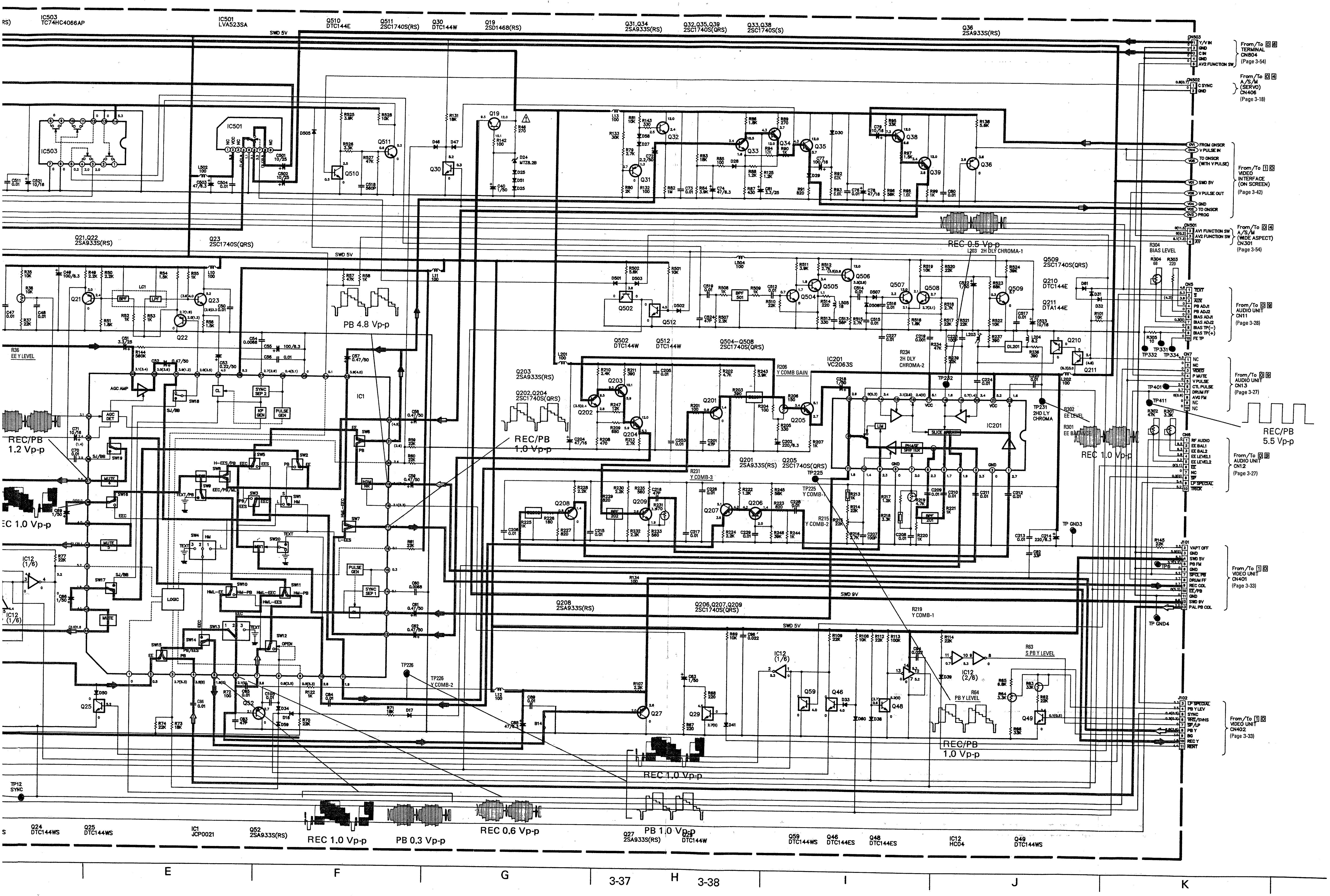

05 VIDEO UNIT
From/To 43 REC AMP CN2 (Page 3-53)
CN501
REC COLOR(629/1M)
GND
PB COLOR(629/1M)
From/To 10 VIDEO INTERFACE J101 (Page 3-38)
CN401
V APT OFF
GND
SWD 5V
PB FM
GND
SPCL PB
DRUM FF
REC COLOR
PB/EE
GND
SWD 9V
PB PAL COLOR
Q519,Q520,Q521 2SC4081(QRS)
Q501 2SA1576(QRS)
Q502 DTC144WU
Q524,Q525,Q527 2SA1576(QRS)
D511 DAN202U
Q505,Q528,Q529,Q530 DTC144WU
DL501
REC 0.2 Vp-p
PB 0.2 Vp-p
IC501 PB20463A-01
REC 0.6Vp-p
Q517 2SC4081(QRS)
Q518 DTA114EU
REC 0.5 Vp-p
REC 0.25 Vp-p
REC/PB 0.4 Vp-p
Q506 DTC144WU
IC503 TC4S01F
Q510,Q514 DTC144WU
Q513 DTC114EU
Q516 2SC4081(QRS)
Q515 DTC144WU
Q509 DTA124EU
From/To 43 REC AMP CN5 (Page 3-53)
CN503
SP/LP
VHS/S VHS
DRUM FF
COLOR ROT
SYNC
GND
SPCL PB
PILOT DET(COMP)
From/To 10 VIDEO INTERFACE J102 (Page 3-38)
CN402
LP SPCL PB
PB Y LEVEL
SYNC
VHS/S VHS
SP/LP
PB Y
SG
REC Y
RENT
REC 0.2 Vp-p
PB 0.25 Vp-p
PB 0.5 Vp-p
REC/PB 3.0 Vp-p
TP521 PILOT CODED COL
TP526 COMP/SEPA
TP501 2fH VCO
TP506 VXO
TP2 GND
REC 0.8 Vp-p
W/D CLIP TP434
TP421 YNR
REC 0.3 Vp-p
TP450 REC FM
IC409 TC4S71F
IC408 TC4S30F
Q401,Q402,Q4 2SC4081(QRS)
Q415 DTC144WU
Q411 DTA144EU
IC407 TC4S01F
Q413 DTC124EU
IC406 TC4S81F
Q414 DTC144WU
PB 0.6 Vp-p
LOGIC


IC409 TC4S71F
IC408 TC4S30F
Q401,Q402,Q403 2SC4081(QRS)
Q404 2SC4081(QRS)
IC402 CXL5003M
R444 YNR LEVEL
Q407,Q409 2SA1576(QRS)
R416 SUB EMPHA INPUT LEVEL
REC/PB 0.4 Vp-p
SUB EMPHA IN TP439
Q415 DTC144WU
D401 DAP202U
Q506 DTC144WU
IC503 TC4S01F
D507 DAN202U
W/D CLIP TP434
TP421 YNR
REC 0.8 Vp-p
REC 0.3 Vp-p
TP450 REC FM
REC 0.5 Vp-p
REC 0.25 Vp-p
REC/PB 0.4 Vp-p
TP506 VXO
Q510,Q514 DTC144WU
Q513 DTC114EU
Q516 2SC4081(QRS)
Q515 DTC144WU
Q509 DTA124EU
Q411 DTA144EU
IC407 TC4S01F
Q413 DTC124EU
IC406 TC4S81F
D405 DAN202U
D406 DAN202U
D404 DAN202U
D407 DAN202U
Q408 DTC144WU
IC401 PB20432D-01
REC 1.0 Vp-p
IC404 MC74HC4538N
IC404 (1/3)
IC405 (1/4)
IC405 CD4066BE
Q414 DTC144WU
PB 0.6 Vp-p
REC 1.0 Vp-p
/PB 3.0 Vp-p
TP3 GND
TP1 GND
CN504
REC FM
GND
PB FM
From/To 4 3 REC AMP CN3 (Page 3-53)
CN506
S VHS
EDIT
PICTURE
RENT
From 0 4 MECHACON(A/S/M) CN612 (Page 3-21)
CN502
3FSC
GND
COMP SYNC
GND
YNR PULSE
FM DET OUT
AT FM
GND
From/To 0 4 SERVO(A/S/M) CN403 (Page 3-18)
SVHS NONLINEAR EMPHASIS/DEEMPHASIS
LOGIC
CLAMP
E
F
G
H
I
J
K

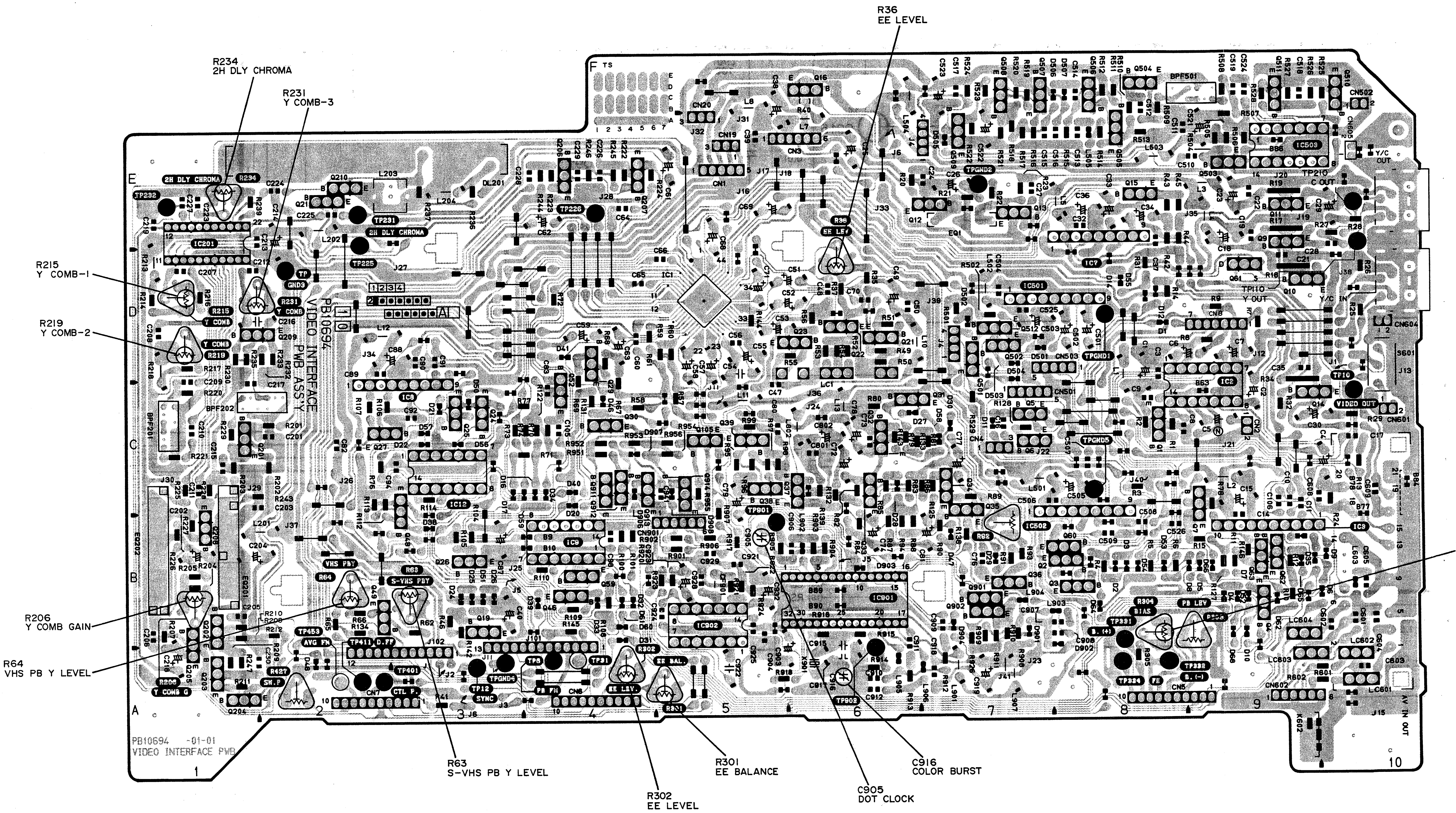
3.19 VIDEO INTERFACE SCHEMATIC DIAGRAM



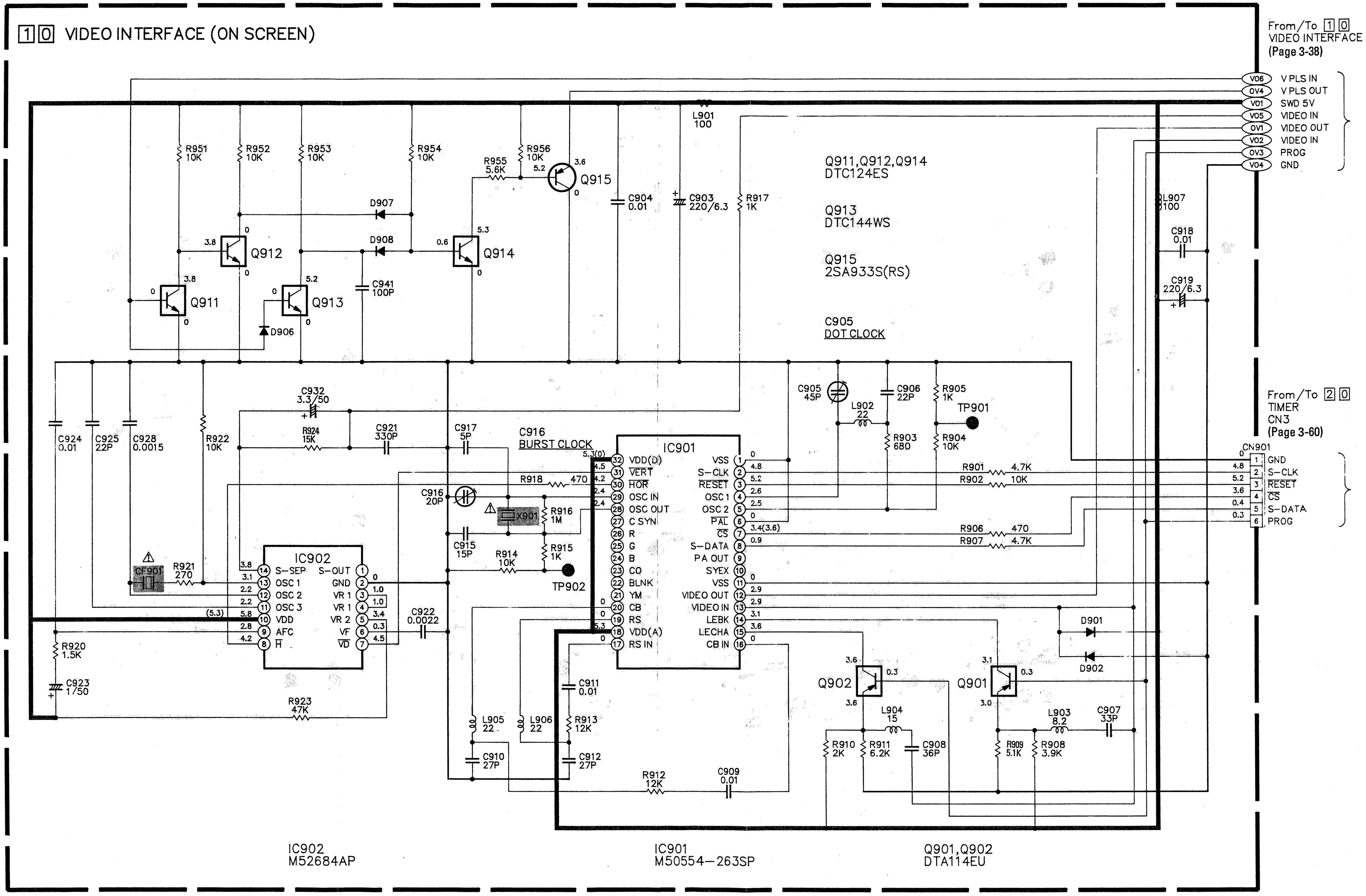
10 VIDEO INTERFACE
IC2 BA7649A
Q1 2SA933S(RS)
Q503 2SC1740S(QRS)
IC503 TC74HC4066AP
IC501 LVA523SA
Q510 DTC144E
Q511 2SC1740S(RS)
Q30 DTC144W
Q19 2SD1468(RS)
Q31,Q34 2SA933S(RS)
Q32,Q35,Q39 2SC1740S(QRS)
Q33,Q38 2SC1740S
SWD 5V
From/To 07 IF CN1 (Page 3-43)
TUNER VIDEO IN
GND
From/To 10 VIDEO INTERFACE (TERMINAL) (Page 3-55)
AV1 VIDEO
R S Y IN
From/To 06 TERMINAL CN803 (Page 3-54)
UNSW 5V
UNSW 12V
From/To 02 REGULATOR(1) CN5 (Page 3-14)
SWD 5V
SWD 12V
From/To 37 SW/JACK CN5 (Page 3-57)
F VIDEO
F Y
F C
REAR/FRONT
REC 1.0 Vp-p
TP GND1
Q60 DTC144ES
Q2 DTC144E
IC3 BA7644AN
Q62,Q63 2SC1740S(QRS)
REC/PB 1.2 Vp-p
Q4 DTC144WS
Q7 2SA933S(RS)
TP GND5
From/To 28 SW/DISPLAY CN14 (Page 3-59)
COMP OUT
Q5 DTA114ES
Q6 2SC1740S(QRS)
Q9 2SA854(QR)
Q10 2SA854(QR)
Q61 2SK381(C)
TP210 C OUT
AV C OUT
SC OUT
R S C IN
AV1 FUNCTION SW
SY OUT
AV1 Y/V OUT
SWD 12V
TP1 Y OUT
TP GND2
Q11 2SA854(QR)
Q12,Q13 2SA933S(RS)
IC7
REC/PB 2.0 Vp-p
REC/PB 2.0 Vp-p
TP10 VIDEO OUT
Q14 2SA854(QR)
Q15 2SA933S(RS)
Q16
To RF CONVERTER
UNSW12V
SW12V/RF 12V
RF AUDIO
RF VIDEO
IC7 LVA523SA
Q16 2SA933S(RS)
REC/PB 4.5 Vp-p
TP12 SYNC
Q21,Q22 2SA933S(RS)
Q23 2SC1740S(QRS)
R36 EE Y LEVEL
REC/PB 1.2 Vp-p
REC 1.0 Vp-p
IC12 (1/6)
AGC AMP
AGC DET
SYNC SEP 2
KP GEN
PULSE GEN
IC1
MUTE
LOGIC
PULSE GEN
SYNC SEP 1
HDM NR
PB 4.8 Vp-p
TP226
TP226 Y COMB-2
Q25
Q52
Q26 DTC144ES
Q24 DTC144WS
Q25 DTC144WS
IC1 JCP0021
Q52 2SA933S(RS)
REC 1.0 Vp-p
PB 0.3 Vp-p
REC 0.6 Vp-p
Q502 DTC144W
Q512 DTC144W
Q504–Q508 2SC1740S(QRS)
Q203 2SA933S(RS)
Q202,Q204 2SC1740S(QRS)
REC/PB 1.0 Vp-p
Q201 2SA933S(RS)
R231 Y COMB-3
Q208 2SA933S(RS)
Q206,Q207,Q209 2SC1740S(QRS)
Q27
Q29
REC 1.0 Vp-p
PB 1.0 Vp-p
Q27 2SA933S(RS)
Q29 DTC144W
A
B
C
D
E
F
G
H
1
2
3
4
5
6


IC503 TC74HC4066AP
IC501 LVA523SA
Q510 DTC144E
Q511 2SC1740S(RS)
Q30 DTC144W
Q19 2SD1468(RS)
Q31,Q34 2SA933S(RS)
Q32,Q35,Q39 2SC1740S(QRS)
Q33,Q38 2SC1740S(S)
Q36 2SA933S(RS)
SWD 5V
Q21,Q22 2SA933S(RS)
Q23 2SC1740S(QRS)
R36 EE Y LEVEL
PB 4.8 Vp-p
REC/PB 1.2 Vp-p
REC 1.0 Vp-p
REC/PB 1.0 Vp-p
Q502 DTC144W
Q512 DTC144W
Q504–Q508 2SC1740S(QRS)
Q203 2SA933S(RS)
Q202,Q204 2SC1740S(QRS)
IC201 VC2063S
R206 Y COMB GAIN
R234 2H DLY CHROMA-2
L203 2H DLY CHROMA-1
REC 0.5 Vp-p
Q509 2SC1740S(QRS)
Q210 DTC144E
Q211 DTA144E
TP231 2HD LY CHROMA
R302 EE LEVEL
R301 EE BALANCE
REC 1.0 Vp-p
REC/PB 5.5 Vp-p
R304 BIAS LEVEL
Q201 2SA933S(RS)
Q205 2SC1740S(QRS)
R231 Y COMB-3
TP225 Y COMB-1
R215 Y COMB-2
Q208 2SA933S(RS)
Q206,Q207,Q209 2SC1740S(QRS)
SWD 9V
R219 Y COMB-1
TP226 Y COMB-2
R63 S PB Y LEVEL
R64 PB Y LEVEL
IC12 (1/6)
IC12 (2/6)
REC/PB 1.0 Vp-p
REC 1.0 Vp-p
PB 1.0 Vp-p
REC 1.0 Vp-p
PB 0.3 Vp-p
REC 0.6 Vp-p
TP12 SYNC
Q24 DTC144WS
Q25 DTC144WS
IC1 JCP0021
Q52 2SA933S(RS)
Q27 2SA933S(RS)
Q28 DTC144W
Q59 DTC144WS
Q46 DTC144ES
Q48 DTC144ES
IC12 HC04
Q49 DTC144WS
CN503 Y/VIN GND C IN GND AV2 FUNCTION SW
From/To 0 8 TERMINAL CN804 (Page 3-54)
CN502 C SYNC GND
From/To 0 4 A/S/M (SERVO) CN406 (Page 3-18)
FROM ONSCR V PULSE IN TO ONSCR (WITH V PULSE) SWD 5V V PULSE OUT GND TO ONSCR PROG
From/To 1 0 VIDEO INTERFACE (ON SCREEN) (Page 3-42)
CN501 AV1 FUNCTION SW AV2 FUNCTION SW AV
From/To 0 4 A/S/M (WIDE ASPECT) CN301 (Page 3-54)
CN5 TEXT AUX PB ADJ1 PB ADJ2 BIAS ADJ1 BIAS ADJ2 BIAS TP(−) BIAS TP(+) FE TP
From/To 0 9 AUDIO UNIT CN11 (Page 3-28)
CN7 NC NC VIDEO P MUTE V PULSE CTL PULSE DRUM FF AVG FM NC NC
From/To 0 9 AUDIO UNIT CN13 (Page 3-27)
CN6 RF AUDIO EE BAL1 EE BAL2 EE LEVEL1 EE LEVEL2 EE NC SP LP SPECIAL TRICK
From/To 0 9 AUDIO UNIT CN12 (Page 3-27)
J101 VAPT OFF GND SWD 5V PB FM GND SPCL PB DRUM FF REC COL EE/PB GND SWD 9V PAL PB COL
From/To 1 0 VIDEO UNIT CN401 (Page 3-33)
J102 LP SPECIAL PB Y LEV SYNC VHS/SVHS SP/LP PB Y BG REC Y RENT
From/To 1 0 VIDEO UNIT CN402 (Page 3-33)
TP GND3
TP GND4
E
F
G
H
I
J
K

3.20 VIDEO INTERFACE CIRCUIT BOARD


R36
EE LEVEL
R234
2H DLY CHROMA
R231
Y COMB-3
R215
Y COMB-1
R219
Y COMB-2
R206
Y COMB GAIN
R64
VHS PB Y LEVEL
R63
S-VHS PB Y LEVEL
R302
EE LEVEL
R301
EE BALANCE
C905
DOT CLOCK
C916
COLOR BURST
R304
BIAS
PB10694 VIDEO INTERFACE PWB ASSY
PB10694 -01-01
VIDEO INTERFACE PWB

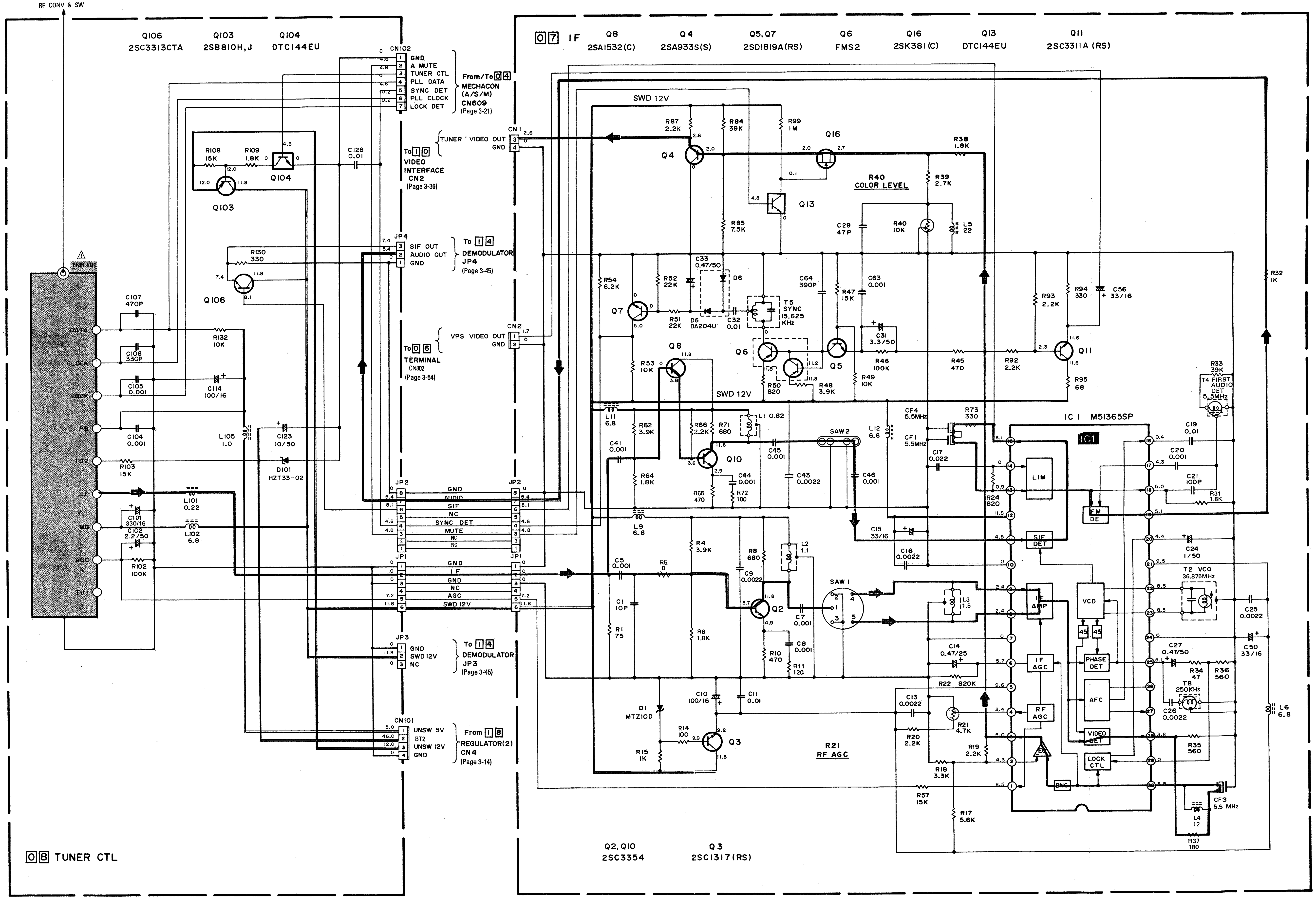
3.21 ON SCREEN SCHEMATIC DIAGRAM



10 VIDEO INTERFACE (ON SCREEN)
From/To 10 VIDEO INTERFACE (Page 3-38)
VO6 V PLS IN
OV4 V PLS OUT
VO1 SWD 5V
VO5 VIDEO IN
OV1 VIDEO OUT
VO2 VIDEO IN
OV3 PROG
VO4 GND
From/To 20 TIMER CN3 (Page 3-60)
CN901
1 GND
2 S-CLK
3 RESET
4 CS
5 S-DATA
6 PROG
Q911,Q912,Q914 DTC124ES
Q913 DTC144WS
Q915 2SA933S(RS)
C905 DOT CLOCK
C916 BURST CLOCK
R951 10K
R952 10K
R953 10K
R954 10K
R955 5.6K
R956 10K
L901 100
C904 0.01
C903 220/6.3
R917 1K
L907 100
C918 0.01
C919 220/6.3
D906
D907
D908
C941 100P
Q911
Q912
Q913
Q914
Q915
C905 45P
L902 22
C906 22P
R903 680
R905 1K
R904 10K
TP901
C932 3.3/50
R924 15K
C921 330P
C917 5P
C924 0.01
C925 22P
C928 0.0015
R922 10K
R918 470
C916 20P
X901
R916 1M
C915 15P
R914 10K
R915 1K
TP902
CF901
R921 270
IC902
S-SEP
OSC 1
OSC 2
OSC 3
VDD
AFC
H
S-OUT
GND
VR 1
VR 1
VR 2
VF
VD
C922 0.0022
R920 1.5K
C923 1/50
R923 47K
IC901
VDD(D)
VERT
HOR
OSC IN
OSC OUT
C SYN
R
G
B
CO
BLNK
YM
CB
RS
VDD(A)
RS IN
VSS
S-CLK
RESET
OSC 1
OSC 2
PAL
CS
S-DATA
PA OUT
SYEX
VSS
VIDEO OUT
VIDEO IN
LEBK
LECHA
CB IN
R901 4.7K
R902 10K
R906 470
R907 4.7K
D901
D902
Q902
Q901
C911 0.01
R913 12K
C912 27P
L905 22
L906 22
C910 27P
R912 12K
C909 0.01
L904 15
R910 2K
R911 6.2K
C908 36P
L903 8.2
C907 33P
R909 5.1K
R908 3.9K
IC902 M52684AP
IC901 M50554-263SP
Q901,Q902 DTA114EU

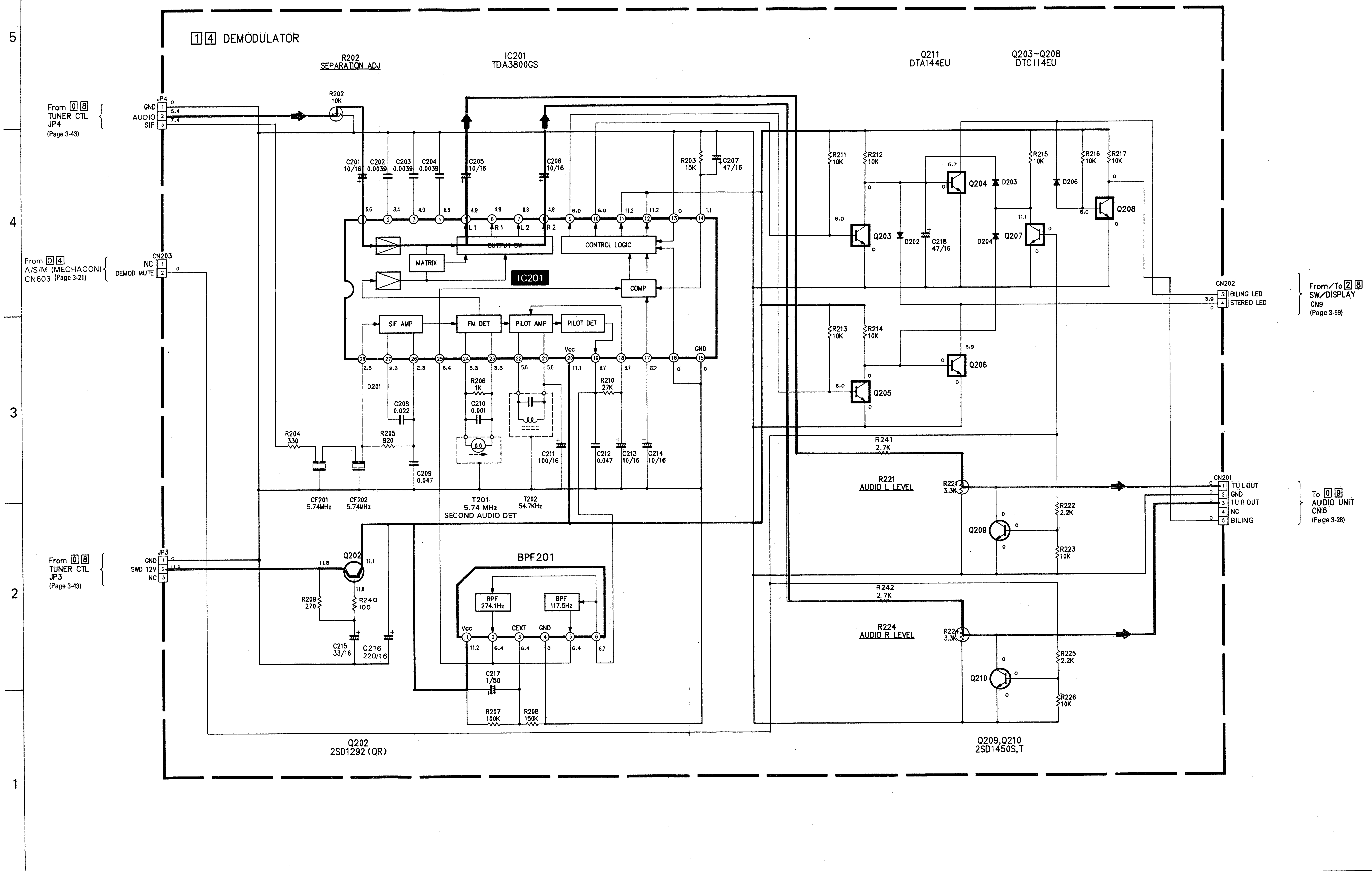
3.22 IF AND TUNER CONTROL SCHEMATIC DIAGRAMS

Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode. (3 ch)


RF CONV & SW
Q106 2SC3313CTA
Q103 2SB810H,J
Q104 DTC144EU
CN102
GND
A MUTE
TUNER CTL
PLL DATA
SYNC DET
PLL CLOCK
LOCK DET
From/To 04 MECHACON (A/S/M) CN609 (Page 3-21)
To 10 VIDEO INTERFACE CN2 (Page 3-36)
TUNER VIDEO OUT
GND
CN1
To 14 DEMODULATOR JP4 (Page 3-45)
JP4
SIF OUT
AUDIO OUT
GND
To 06 TERMINAL CN802 (Page 3-54)
VPS VIDEO OUT
CN2
JP2
GND
AUDIO
SIF
NC
SYNC DET
MUTE
JP1
I F
AGC
SWD 12V
JP3
To 14 DEMODULATOR JP3 (Page 3-45)
CN101
UNSW 5V
BT2
UNSW 12V
From 18 REGULATOR(2) CN4 (Page 3-14)
TNR 101
DATA
CLOCK
LOCK
PB
TU2
IF
MB
AGC
TU1
R108 15K
R109 1.8K
C126 0.01
R130 330
C107 470P
C106 330P
C105 0.001
C104 0.001
R132 10K
C114 100/16
L105 1.0
C123 10/50
D101 HZT33-02
R103 15K
L101 0.22
C101 330/16
C102 2.2/50
L102 6.8
R102 100K
08 TUNER CTL
07 IF
Q8 2SA1532(C)
Q4 2SA933S(S)
Q5,Q7 2SD1819A(RS)
Q6 FMS2
Q16 2SK381(C)
Q13 DTC144EU
Q11 2SC3311A(RS)
SWD 12V
R87 2.2K
R84 39K
R99 1M
Q16
R38 1.8K
R39 2.7K
R40 COLOR LEVEL
Q13
R85 7.5K
C29 47P
R40 10K
L5 22
C33 0.47/50
D6
R54 8.2K
R52 22K
C64 390P
C63 0.001
R47 15K
T5 SYNC 15.625 KHz
R93 2.2K
R94 330
C56 33/16
R32 1K
Q7
R51 22K
D6 DA204U
C32 0.01
C31 3.3/50
Q6
Q5
R46 100K
R45 470
R92 2.2K
Q11
Q8
R53 10K
R50 820
R48 3.9K
R49 10K
R95 68
R33 39K
T4 FIRST AUDIO DET 5.5MHz
L11 6.8
R62 3.9K
R66 2.2K
R71 680
L1 0.82
SAW2
L12 6.8
CF4 5.5MHz
CF1 5.5MHz
R73 330
IC1 M51365SP
C19 0.01
C20 0.001
C21 100P
R31 1.8K
C41 0.001
Q10
C45 0.001
C17 0.022
R64 1.8K
C44 0.001
C43 0.0022
C46 0.001
R24 820
LIM
FM DE
R65 470
R72 100
L9 6.8
C15 33/16
SIF DET
C24 1/50
R4 3.9K
R8 680
L2 1.1
C16 0.0022
T2 VCO 36.875MHz
C5 0.001
R5 0
C9 0.0022
SAW1
C1 10P
Q2
C7 0.001
L3 1.5
IF AMP
VCD
C25 0.0022
R1 75
R6 1.8K
C8 0.001
R10 470
R11 120
C14 0.47/25
IF AGC
PHASE DET
C27 0.47/50
R34 47
R36 560
C50 33/16
R22 820K
T8 250KHz
C10 100/16
C11 0.01
C13 0.0022
R21 4.7K
RF AGC
AFC
C26 0.0022
L6 6.8
D1 MTZ10D
R14 100
Q3
R20 2.2K
R19 2.2K
VIDEO DET
R35 560
R15 1K
R21 RF AGC
R18 3.3K
LOCK CTL
R57 15K
R17 5.6K
CF3 5.5MHz
L4 12
R37 180
Q2,Q10 2SC3354
Q3 2SC1317(RS)
A
B
C
D
E
F
G
H
1
2
3
4
5
6

3.23 DEMODULATOR SCHEMATIC DIAGRAM

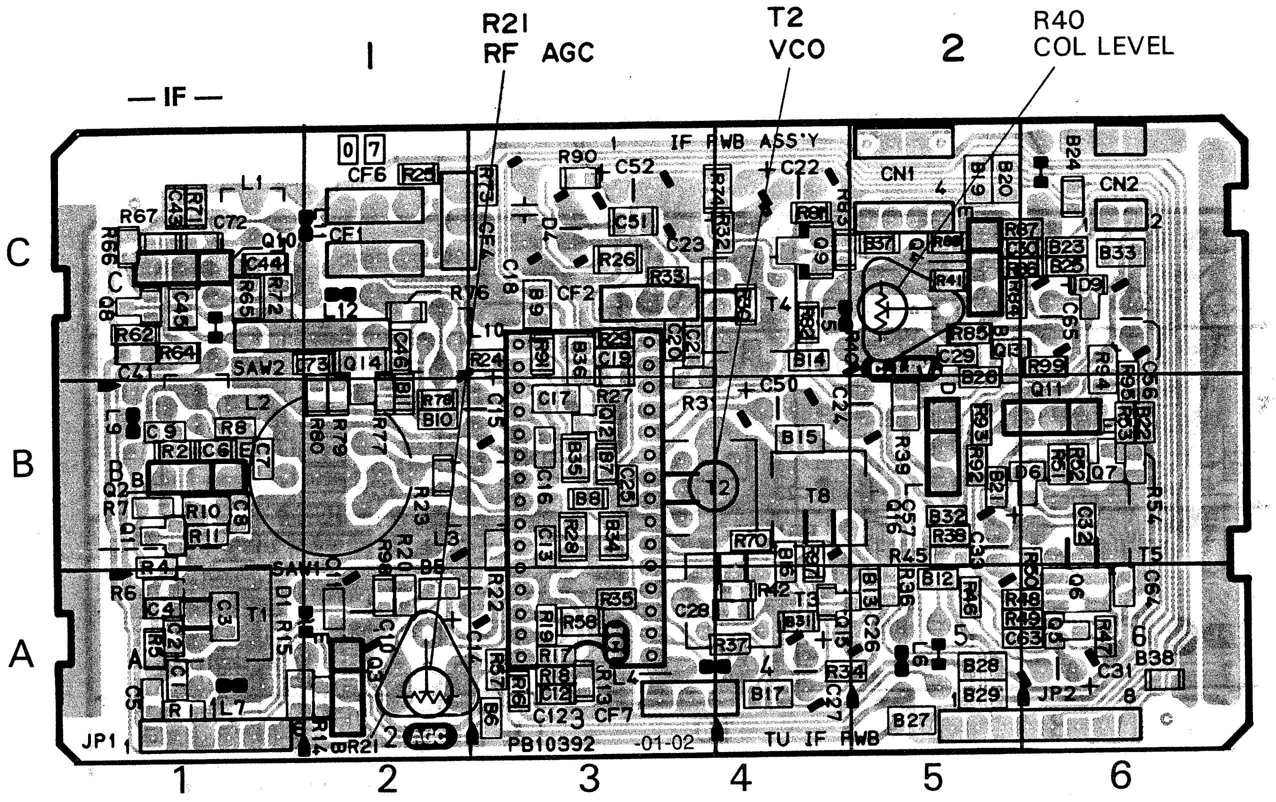
Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode. (3 ch)



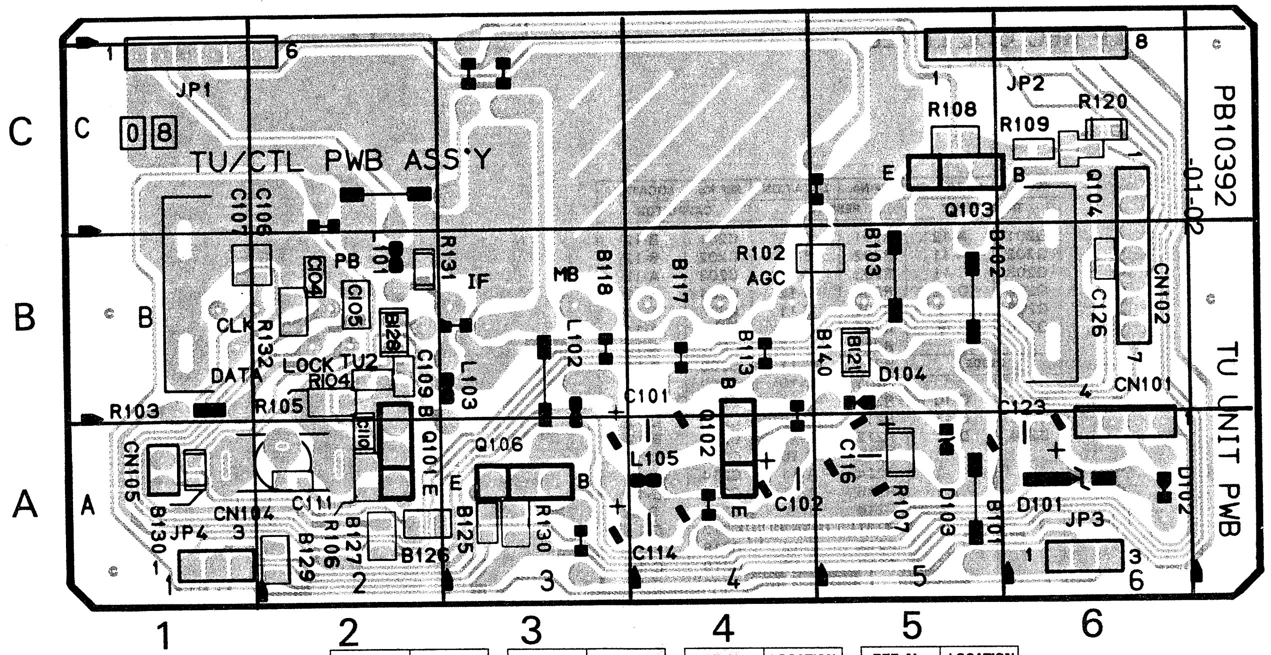
14 DEMODULATOR
R202 SEPARATION ADJ
IC201 TDA3800GS
Q211 DTA144EU
Q203~Q208 DTC114EU
From 08 TUNER CTL JP4 (Page 3-43)
JP4 GND 1 AUDIO 2 SIF 3
From 04 A/S/M (MECHACON) CN603 (Page 3-21)
CN203 NC 1 DEMOD MUTE 2
From 08 TUNER CTL JP3 (Page 3-43)
JP3 GND 1 SWD 12V 2 NC 3
R202 10K
C201 10/16
C202 0.0039
C203 0.0039
C204 0.0039
C205 10/16
C206 10/16
R203 15K
C207 47/16
OUTPUT SW
MATRIX
CONTROL LOGIC
COMP
IC201
SIF AMP
FM DET
PILOT AMP
PILOT DET
L1 R1 L2 R2
Vcc
GND
D201
R206 1K
C210 0.001
C208 0.022
R205 820
R204 330
C209 0.047
R210 27K
C211 100/16
C212 0.047
C213 10/16
C214 10/16
CF201 5.74MHz
CF202 5.74MHz
T201 5.74 MHz SECOND AUDIO DET
T202 54.7KHz
Q202
R209 270
R240 100
C215 33/16
C216 220/16
BPF201
BPF 274.1Hz
BPF 117.5Hz
Vcc CEXT GND
C217 1/50
R207 100K
R208 150K
Q202 2SD1292 (QR)
R211 10K
R212 10K
R213 10K
R214 10K
R215 10K
R216 10K
R217 10K
Q203
Q204
Q205
Q206
Q207
Q208
D202
D203
D204
D206
C218 47/16
CN202 3 BILING LED 4 STEREO LED
From/To 28 SW/DISPLAY CN9 (Page 3-59)
R241 2.7K
R221 AUDIO L LEVEL
R221 3.3K
R222 2.2K
R223 10K
Q209
R242 2.7K
R224 AUDIO R LEVEL
R224 3.3K
R225 2.2K
R226 10K
Q210
Q209,Q210 2SD1450S,T
CN201 1 TU L OUT 2 GND 3 TU R OUT 4 NC 5 BILING
To 09 AUDIO UNIT CN6 (Page 3-28)
5
4
3
2
1

3.24 IF, TUNER CTL AND DEMODULATOR CIRCUIT BOARDS

— IF —


R21
RF AGC
T2
VCO
R40
COL LEVEL
IF PWB ASS'Y
PB10392 -01-02
TU IF PWB
AGC
C
B
A
1
2
3
4
5
6

— TUNER CTL —


TU/CTL PWB ASS'Y
PB10392 -01-02
TU UNIT PWB
C
B
A
1
2
3
4
5
6

REF. No.	LOCATION
DIODE	
D101	A-5
D102	A-6
D103	A-5
D104	B-4

REF. No.	LOCATION
TRANSISTOR	
Q101	A-2
Q102	A-4
Q103	C-5
Q104	C-5
Q106	A-2

REF. No.	LOCATION
RESISTOR	
R103	B-1
R102	B-4
R104	B-2
R105	B-1
R106	A-2
R107	A-4
R108	C-5
R109	C-5
R120	C-6
R130	A-2
R131	B-2
R132	B-1

REF. No.	LOCATION
CAPACITOR	
C101	A-3
C102	A-4
C104	B-1
C105	B-2
C106	B-1
C107	B-1
C109	B-2
C110	A-2
C111	A-1
C114	A-3
C116	A-4
C123	A-5
C126	B-6

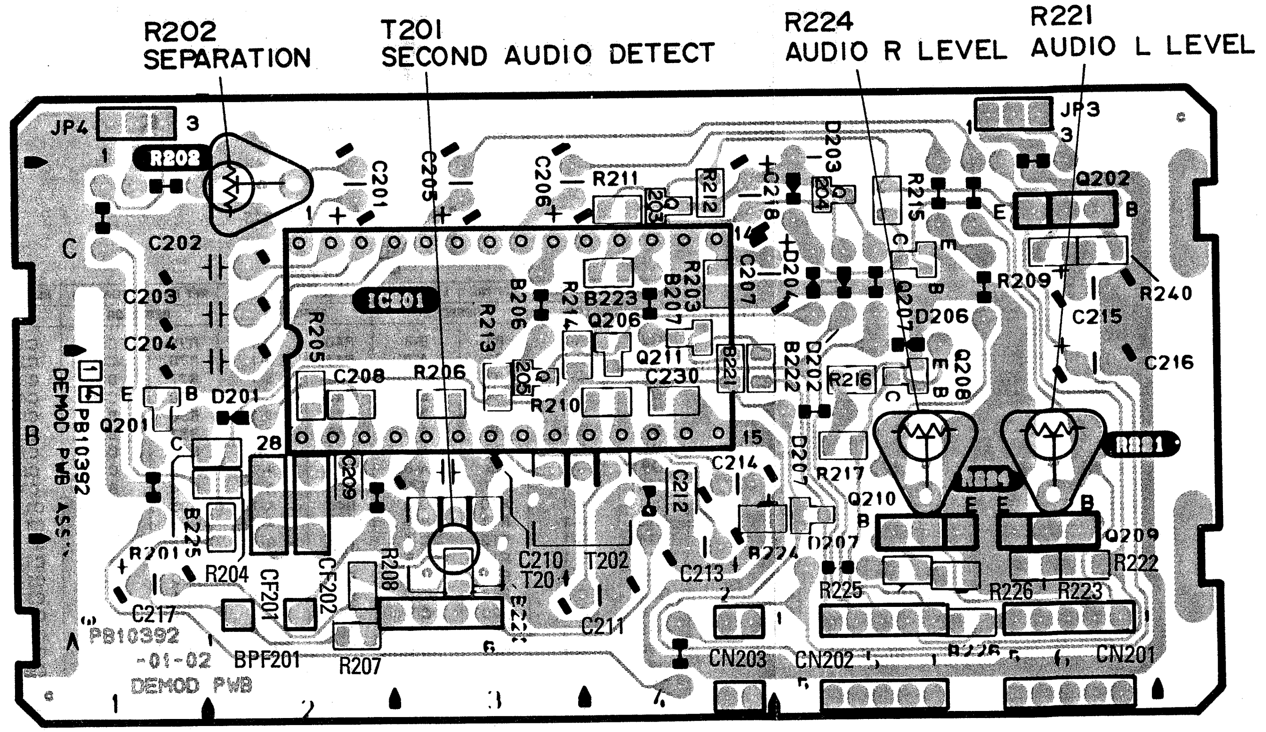
•Address of chip parts
A-1D
└──── Address

REF No.	LOCATION
TRANSISTOR	
Q1	B-1
Q2	B-1
Q3	A-2
Q4	C-5
Q5	A-5
Q6	A-5
Q7	B-6
Q8	C-0
Q9	C-4
Q10	C-1
Q11	B-5
Q12	B-3
Q13	C-5
Q14	C-2
Q15	A-4
DIODE	
D1	A-1
D4	C-3
D6	B-5
D9	C-6

REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION
RESISTOR		RESISTOR		RESISTOR	
R1	A-1	R36	A-4	R77	B-2
R2	B-1	R37	A-4	R78	B-2
R4	B-1	R38	B-5	R79	B-2
R5	A-1	R39	B-5	R80	B-1
R6	A-1	R40	C-4	R81	C-4
R7	B-1	R41	C-5	R82	C-4
R8	B-1	R42	A-4	R83	C-4
R10	B-1	R45	B-5	R84	C-5
R11	B-1	R46	A-5	R85	C-5
R13	A-3	R47	A-6	R86	C-5
R14	A-1	R48	A-5	R87	C-5
R15	A-1	R49	A-5	R88	C-5
R16	A-2	R50	A-5	R90	D-3
R17	A-3	R51	B-5	R91	C-3
R18	A-3	R52	B-5	R92	B-5
R19	A-3	R53	B-6	R93	B-5
R20	A-2	R54	B-6	R94	C-6
R21	A-2	R57	A-2	R95	B-6
R22	B-2	R58	A-3	R97	B-4
R23	B-2	R62	C-0	R98	A-2
R24	C-2	R63	C-1	R99	C-5
R25	D-2	R64	C-1		
R26	C-3	R65	C-1	CAPACITOR	
R27	C-3	R66	C-0		
R28	B-3	R67	C-1	CN1	C-4
R29	C-3	R70	B-4	CN2	C-6
R30	C-4	R71	C-1	CF1	C-2
R31	C-3	R72	C-1	CF2	C-3
R33	C-3	R73	D-2	CF4	C-2
R34	A-4	R74	D-4	CF6	C-2
R35	A-3	R76	C-2	CF7	A-3

REF No.	LOCATION	REF No.	LOCATION
CAPACITOR		CAPACITOR	
C1	A-1	C32	B-5
C2	A-1	C33	B-5
C3	A-1	C41	C-0
C4	A-1	C43	C-1
C5	A-1	C44	C-1
C6	B-1	C45	C-1
C7	B-1	C46	C-2
C8	B-1	C50	B-4
C9	B-1	C51	C-3
C10	A-2	C52	D-3
C11	A-1	C56	C-6
C12	A-3	C57	B-5
C13	B-3	C63	A-5
C14	A-2	C64	A-6
C15	B-2	C65	C-5
C16	B-3	C72	C-1
C17	B-3	C73	C-1
C18	C-3		
C19	C-3		
C20	C-3		
C21	C-3		
C22	D-4		
C23	C-3		
C24	B-4		
C25	B-3		
C26	A-4		
C27	A-4		
C28	A-4		
C29	C-5		
C30	C-5		
C31	A-5		

— DEMODULATOR —


R202
SEPARATION
T201
SECOND AUDIO DETECT
R224
AUDIO R LEVEL
R221
AUDIO L LEVEL
IC201
PB10392 -01-02
DEMOD PWB
DEMOD PWB ASS'Y
C
B
A
1
2
3
4
5
6

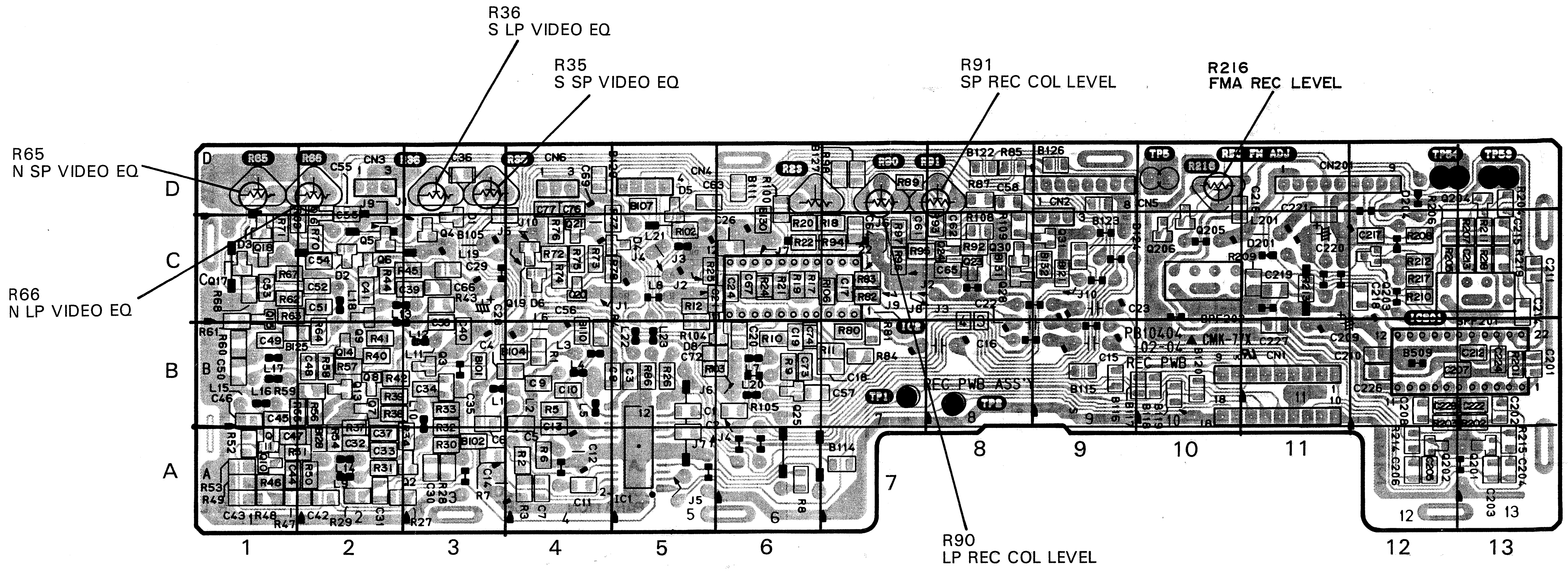
REF. No.	LOCATION
TRANSISTOR	
Q201	1B
Q203	4C
Q204	5C
Q205	3B
Q206	4C
Q207	5C
Q208	5B

REF. No.	LOCATION
RESISOTR	
R201	2B
R203	4C
R204	2B
R205	2B
R206	3B
R207	2A
R208	2A
R209	6C
R210	4B
R211	4C
R212	4C
R213	3B

REF. No.	LOCATION
RESISTOR	
R214	3B
R215	5C
R216	5B
R217	5B
R222	6A
R223	6A
R225	5A
R226	5A
R240	6C

REF. No.	LOCATION
CAPACITOR	
C208	2B
C209	2B
C212	4B

3.25 REC CIRCUIT BOARD



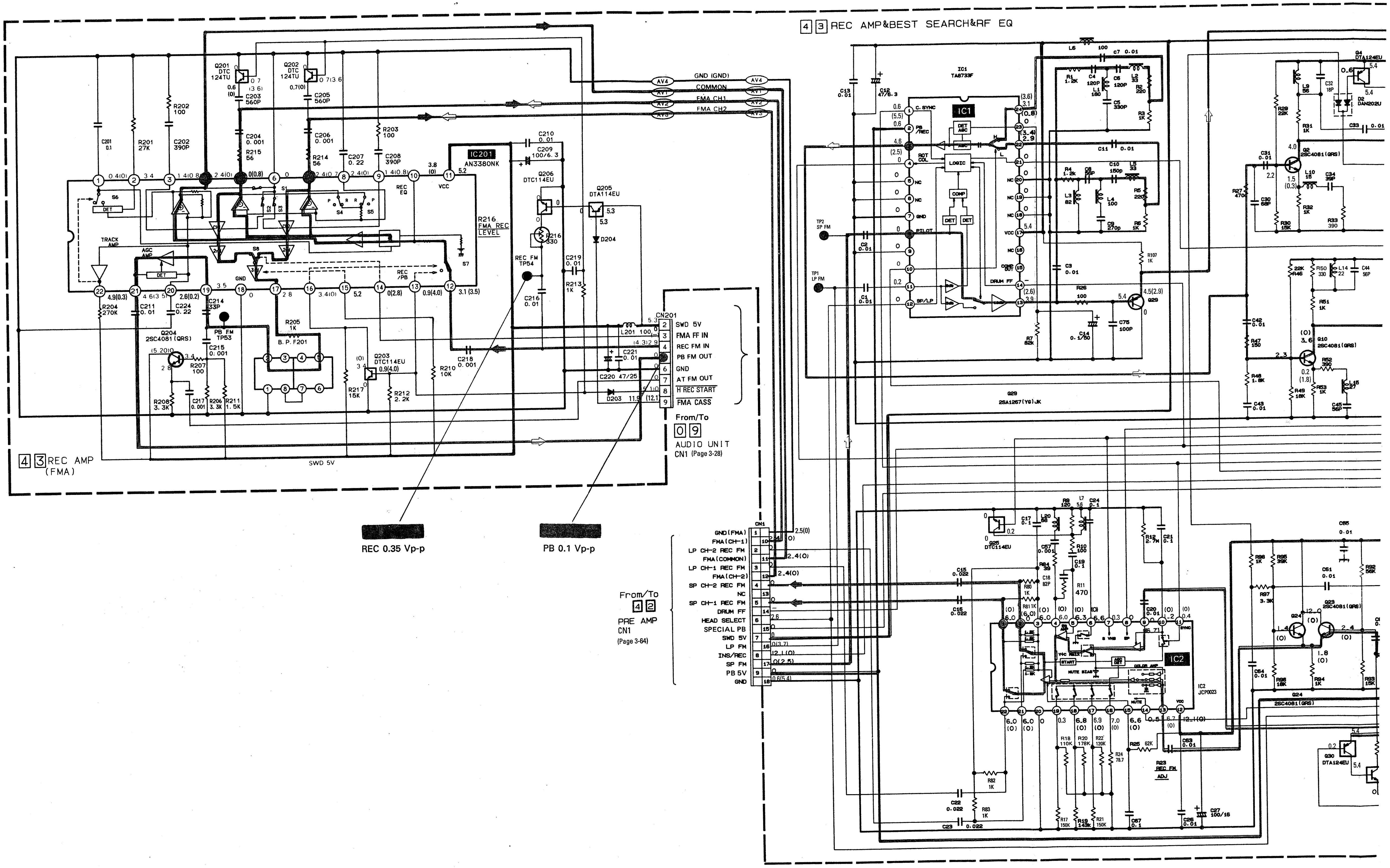
- Address of chip parts

A-1
└─ Address

REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION
TRANSISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR		CAPACITOR	
Q2	A-2	R1	B-3	R40	B-1	R75	C-3	C1	B-4	C37	B-1
Q3	B-2	R2	A-3	R41	B-1	R76	C-3	C2	B-4	C38	C-2
Q4	C-2	R3	A-3	R42	B-1	R77	D-3	C3	B-4	C39	C-2
Q5	C-1	R4	B-3	R43	C-2	R78	C-3	C4	B-3	C40	B-2
Q6	C-1	R5	B-3	R44	C-1	R80	B-6	C5	B-3	C41	C-1
Q7	B-1	R6	A-3	R45	C-2	R81	B-6	C6	B-2	C42	A-1
Q8	B-1	R7	A-2	R46	A-1	R82	C-6	C7	A-3	C43	A-1
Q9	C-1	R8	A-5	R47	A-1	R83	C-6	C8	B-3	C44	A-1
Q10	A-1	R9	B-5	R48	A-1	R84	B-6	C9	B-3	C45	B-1
Q11	A-1	R10	B-5	R49	A-1	R85	D-7	C10	B-3	C46	B-1
Q13	B-1	R11	B-6	R50	A-1	R86	B-4	C11	A-3	C47	A-1
Q14	B-1	R12	C-4	R51	A-1	R87	D-7	C12	A-3	C48	B-1
Q15	C-1	R17	C-5	R52	A-1	R89	D-6	C13	B-3	C49	B-1
Q16	D-1	R18	C-6	R53	A-1	R90	D-6	C14	A-2	C50	B-1
Q17	C-1	R19	C-5	R54	A-1	R91	D-6	C15	B-8	C51	C-1
Q18	C-1	R20	C-5	R55	B-1	R92	C-7	C16	B-6	C52	C-1
Q19	C-3	R21	C-5	R56	B-1	R93	C-7	C17	C-6	C53	C-1
Q20	C-3	R22	C-5	R57	B-1	R94	C-6	C18	B-6	C54	C-1
Q21	C-3	R23	D-5	R58	B-1	R95	C-6	C19	B-5	C55	D-1
Q23	C-7	R24	C-5	R59	B-1	R96	C-6	C20	B-5	C57	B-5
Q24	C-7	R25	C-4	R60	B-1	R97	C-6	C21	C-4	C58	D-7
Q25	B-5	R26	B-4	R61	C-1	R98	D-6	C22	C-7	C61	C-6
Q28	C-7	R27	A-1	R62	C-1	R100	D-5	C23	C-8	C62	C-7
Q30	C-7	R28	A-2	R63	C-1	R102	C-4	C24	C-5	C63	D-4
Q31	C-8	R29	A-1	R64	B-1	R103	B-4	C26	C-5	C64	C-6
		R30	A-2	R65	D-1	R104	C-4	C27	C-5	C65	C-7
DIODE		R31	A-1	R66	D-1	R105	B-5	C28	C-2	C66	C-2
		R32	B-2	R67	C-1	R106	C-6	C29	C-2	C67	C-5
D1	D-2	R33	B-2	R68	C-1	R108	C-7	C30	A-2	C69	C-3
D2	C-1	R34	A-2	R69	D-1	R109	C-7	C31	A-1	C72	B-4
D3	C-1	R35	D-2	R70	C-1			C32	A-1	C73	B-5
D4	C-4	R36	D-2	R71	C-1			C33	A-1	C74	B-5
D5	D-4	R37	B-1	R72	C-3			C34	B-2	C76	D-3
D6	C-3	R38	B-1	R73	C-3			C35	B-2	C77	D-3
D8	B-5	R39	B-1	R74	C-3			C36	D-2		

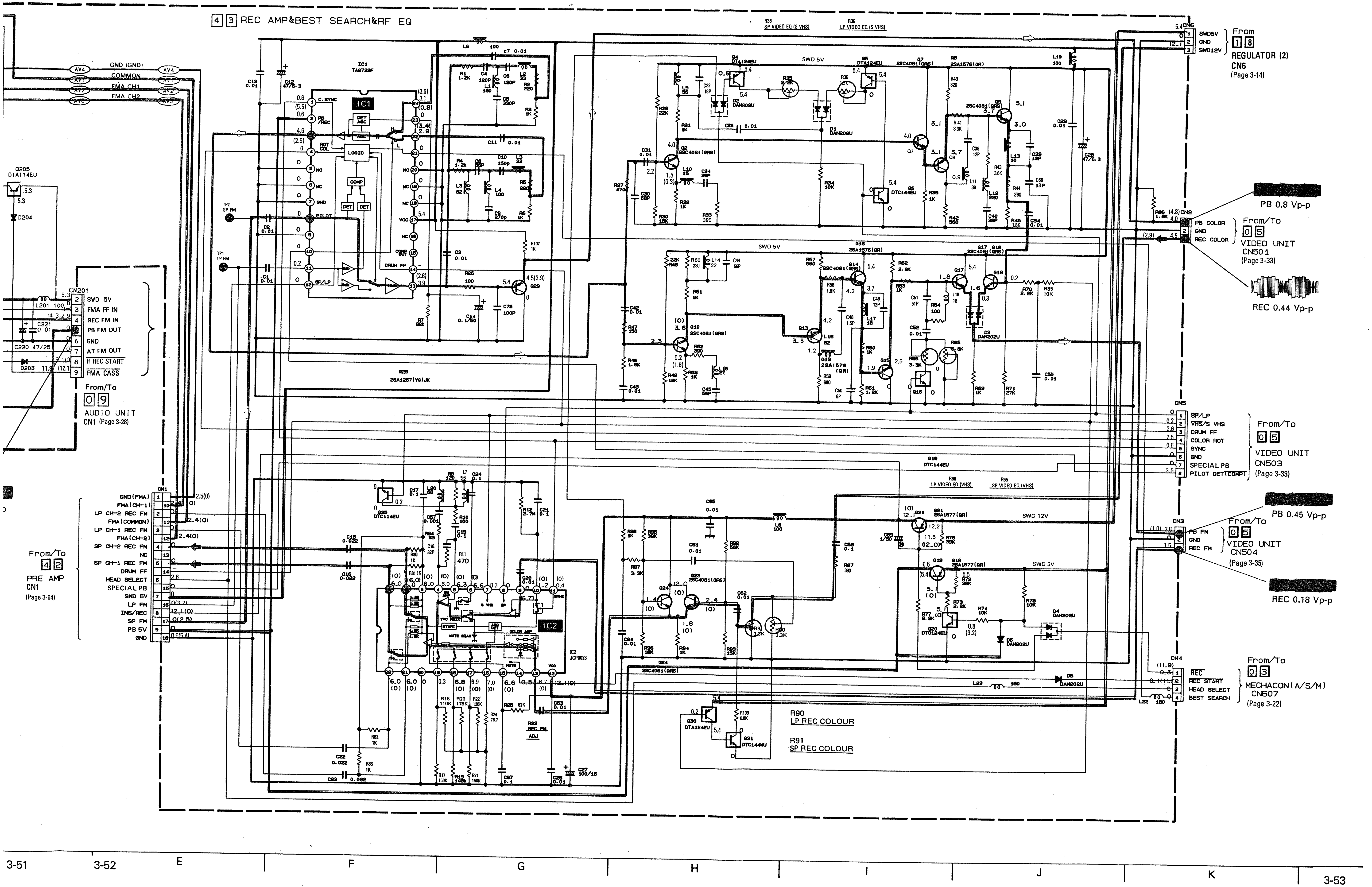
REF No.	LOCATION	REF No.	LOCATION	REF No.	LOCATION
TRANSISTOR		RESISTOR		CAPACITOR	
Q201	A-12	R201	B-12	C201	B-12
Q202	A-11	R202	B-12	C202	B-12
Q203	C-11	R203	B-11	C203	A-12
Q204	D-12	R204	D-12	C204	A-12
Q205	D-9	R205	C-11	C205	A-11
Q206	C-9	R206	C-11	C206	A-11
		R207	C-12	C207	B-12
DIODE		R208	C-11	C208	B-11
		R209	C-10	C209	C-11
D201	C-10	R210	C-11	C210	B-11
D203	C-11	R211	C-12	C211	C-12
D204	D-11	R212	C-11	C212	B-12
		R213	C-10	C213	C-12
		R214	A-11	C214	C-12
		R215	A-12	C215	C-12
		R216	D-9	C216	D-9
		R217	C-11	C217	C-11
		R218	C-12	C218	C-11
		R219	C-12	C219	C-10
				C220	C-10
				C221	D-10
				C222	B-12
				C223	B-11
				C224	B-12
				C226	B-11
				C227	C-10

3.26 REC AND FMA SCHEMATIC DIAGRAMS

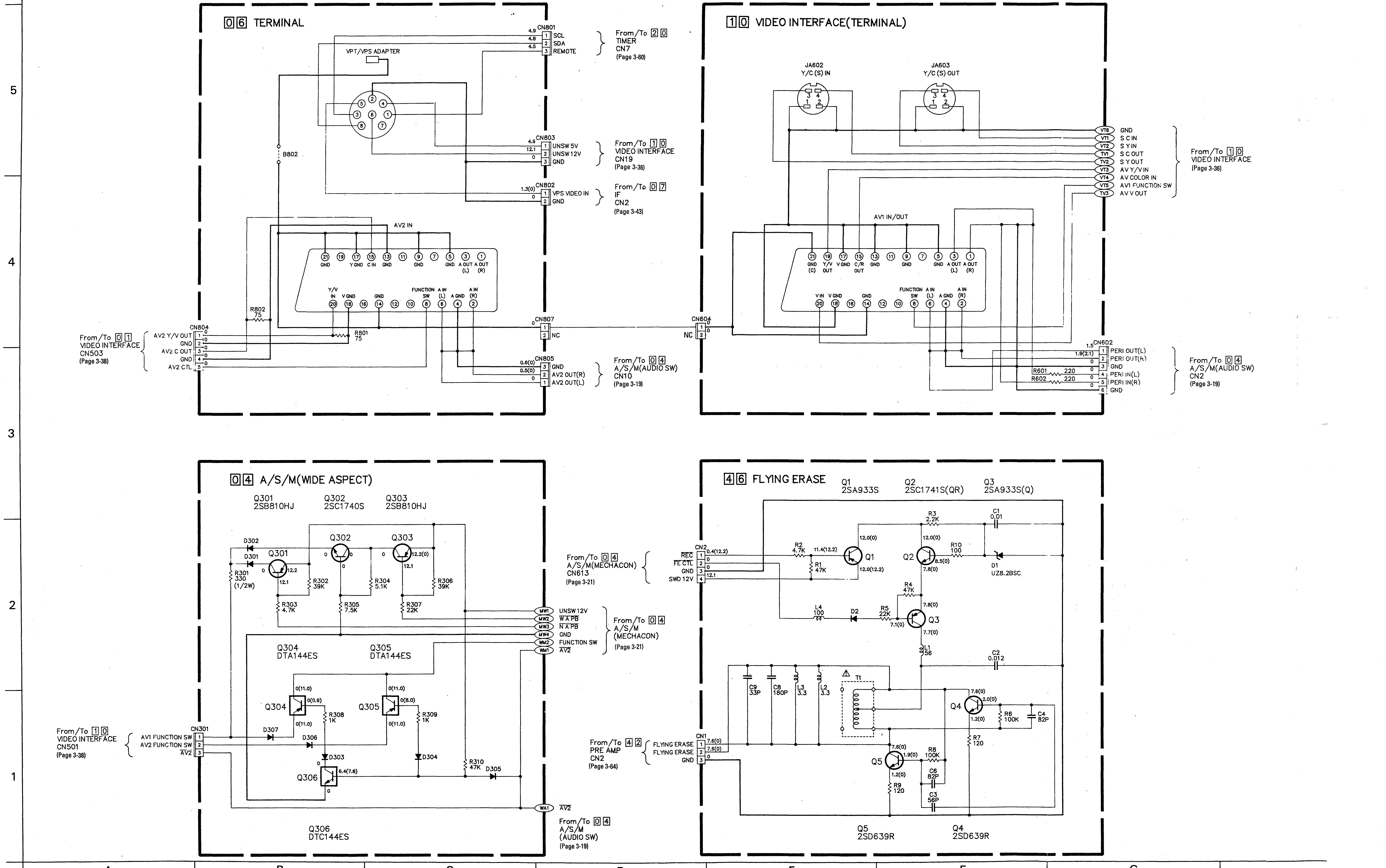


4 3 REC AMP (FMA)
4 3 REC AMP&BEST SEARCH&RF EQ
IC201 AN3380NK
Q201 DTC124TU
Q202 DTC124TU
Q203 DTC114EU
Q204 2SC4081(QRS)
Q205 DTA114EU
Q206 DTC114EU
R216 FMA REC LEVEL
REC FM TP54
PB FM TP53
B. P. F201
TRACK AMP
AGC AMP
DET
REC EQ
REC/PB
VCC
GND
SWD 5V
CN201
SWD 5V
FMA FF IN
REC FM IN
PB FM OUT
GND
AT FM OUT
H REC START
FMA CASS
From/To 0 9 AUDIO UNIT CN1 (Page 3-28)
AV4 GND (GND)
AV1 COMMON
AV2 FMA CH1
AV3 FMA CH2
REC 0.35 Vp-p
PB 0.1 Vp-p
From/To 4 2 PRE AMP CN1 (Page 3-64)
CN1
GND(FMA)
FMA(CH-1)
LP CH-2 REC FM
FMA(COMMON)
LP CH-1 REC FM
FMA(CH-2)
SP CH-2 REC FM
NC
SP CH-1 REC FM
DRUM FF
HEAD SELECT
SPECIAL PB
SWD 5V
LP FM
INS/REC
SP FM
PB 5V
GND
IC1 TA8733F
C. SYNC
PB/REC
ROT COL
DET ABC
LOGIC
COMP
DET
PILOT
SP/LP
DRUM FF
COMP OUT
TP2 SP FM
TP1 LP FM
Q29 2SA1267(YG)JK
Q25 DTC114EU
IC2 JCP0023
START
MUTE BIAS
COLOR AMP
MUTE
R23 REC FM ADJ
Q4 DTA124EU
D2 DAN202U
Q2 2SC4081(QRS)
Q10 2SC4081(QRS)
Q23 2SC4081(QRS)
Q24 2SC4081(QRS)
Q30 DTA124EU

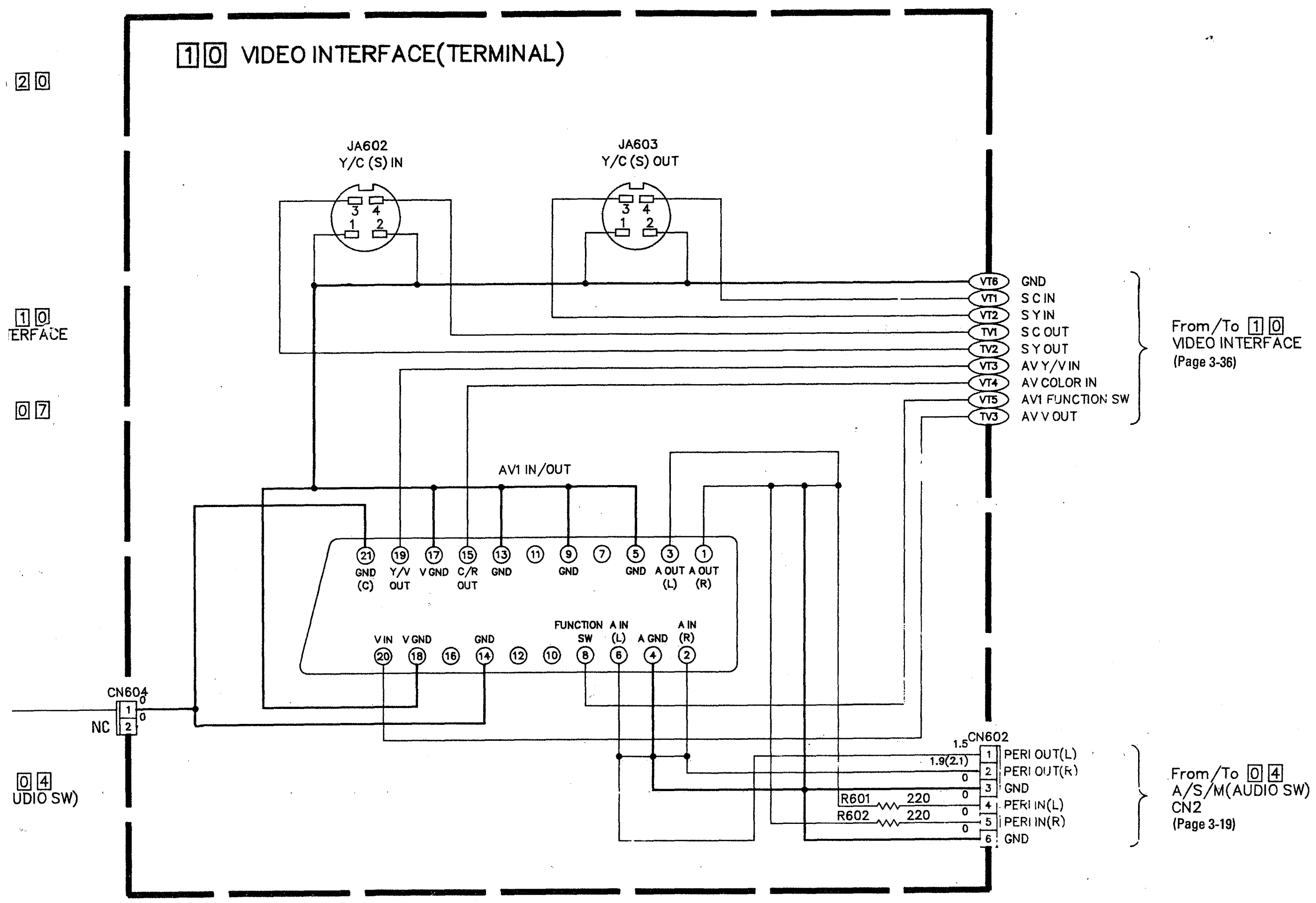
4 3 REC AMP&BEST SEARCH&RF EQ


R35 SP VIDEO EQ (S VHS)
R36 LP VIDEO EQ (S VHS)
IC1 TA8733F
IC1
IC2 JCP0023
IC2
C. SYNC
PB /REC
ROT COL
PILOT
DET ABC
ABC
LOGIC
COMP
DET
SP/LP
DRUM FF
COMP OUT
VCC
SWD 5V
SWD 12V
GND (GND)
COMMON
FMA CH1
FMA CH2
AV4
AV1
AV2
AV3
Q205 DTA114EU
D204
CN201
SWD 5V
FMA FF IN
REC FM IN
PB FM OUT
GND
AT FM OUT
H REC START
FMA CASS
L201 100
C221 0.01
C220 47/25
D203
From/To
0 9
AUDIO UNIT
CN1 (Page 3-28)
CN1
GND(FMA)
FMA(CH-1)
LP CH-2 REC FM
FMA(COMMON)
LP CH-1 REC FM
FMA(CH-2)
SP CH-2 REC FM
NC
SP CH-1 REC FM
DRUM FF
HEAD SELECT
SPECIAL PB
SWD 5V
LP FM
INS/REC
SP FM
PB 5V
GND
From/To
4 2
PRE AMP
CN1
(Page 3-64)
CN6
SWD5V
GND
SWD12V
From
1 8
REGULATOR (2)
CN6
(Page 3-14)
PB 0.8 Vp-p
CN2
PB COLOR
GND
REC COLOR
From/To
0 5
VIDEO UNIT
CN501
(Page 3-33)
REC 0.44 Vp-p
CN5
SP/LP
VHS/S VHS
DRUM FF
COLOR ROT
SYNC
GND
SPECIAL PB
PILOT DETT(COMP)
From/To
0 5
VIDEO UNIT
CN503
(Page 3-33)
PB 0.45 Vp-p
CN3
PB FM
GND
REC FM
From/To
0 5
VIDEO UNIT
CN504
(Page 3-35)
REC 0.18 Vp-p
CN4
REC
REC START
HEAD SELECT
BEST SEARCH
From/To
0 3
MECHACON(A/S/M)
CN607
(Page 3-22)
Q2 2SC4081(QRS)
Q4 DTA124EU
Q5 DTA124EU
Q6 DTC144EU
Q7 2SC4081(QRS)
Q8 2SA1576(QR)
Q9 2SC4081(QRS)
Q10 2SC4081(QRS)
Q13 2SA1576 (QR)
Q14 2SC4081(QRS)
Q15 2SA1576(QR)
Q16
Q17 Q18 2SC4081(QRS)
Q19 2SA1577(QR)
Q20 DTC124EU
Q21 2SA1577(QR)
Q23 2SC4081(QRS)
Q24 2SC4081(QRS)
Q25 DTC114EU
Q26 DTC114EU
Q29 2SA1267(Y6)JK
Q30 DTA124EU
Q31 DTC144MU
D1 DAN202U
D2 DAN202U
D3 DAN202U
D4 DAN202U
D5 DAN202U
D6 DAN202U
L6 100
L19 100
L8 100
L22 180
L23 180
TP2 SP FM
TP1 LP FM
MUTE BIAS
START
COLOR AMP
ABC DET
MUTE
R23 REC FM ADJ
R90 LP REC COLOUR
R91 SP REC COLOUR
R66 LP VIDEO EQ (VHS)
R65 SP VIDEO EQ (VHS)
E
F
G
H
I
J
K

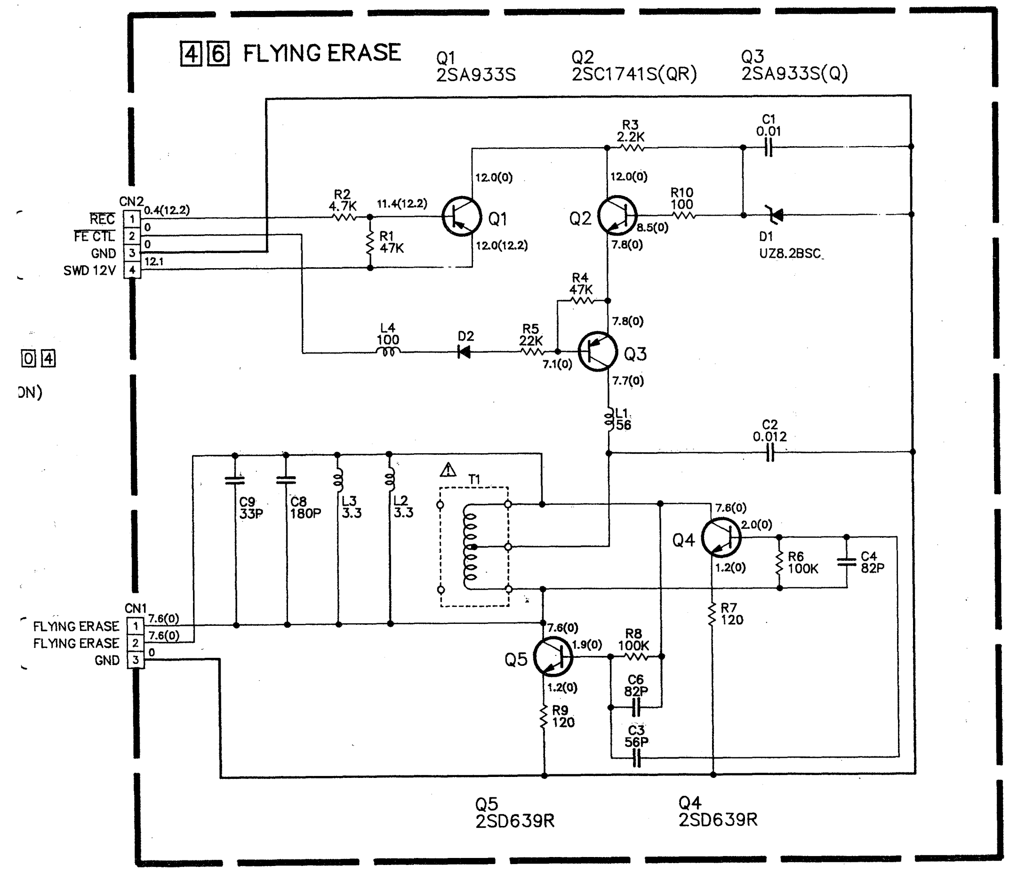
3.27 TERMINAL, VIDEO INTERFACE (TERMINAL), FLYING ERASE AND A/S/M (WIDE ASPECT) SCHEMATIC DIAGRAMS


06 TERMINAL
VPT/VPS ADAPTER
CN801
1 SCL
2 SDA
3 REMOTE
From/To 20 TIMER CN7 (Page 3-60)
CN803
1 UNSW 5V
2 UNSW 12V
3 GND
From/To 10 VIDEO INTERFACE CN19 (Page 3-36)
CN802
1 VPS VIDEO IN
2 GND
From/To 07 IF CN2 (Page 3-43)
B802
AV2 IN
GND
Y GND
C IN
A OUT (L)
A OUT (R)
Y/V IN
V GND
FUNCTION SW
A IN (L)
A GND
A IN (R)
R802 75
R801 75
CN804
AV2 Y/V OUT
AV2 C OUT
AV2 CTL
From/To 01 VIDEO INTERFACE CN503 (Page 3-38)
CN807
NC
CN805
AV2 OUT(R)
AV2 OUT(L)
From/To 04 A/S/M(AUDIO SW) CN10 (Page 3-19)
10 VIDEO INTERFACE(TERMINAL)
JA602 Y/C (S) IN
JA603 Y/C (S) OUT
VT6 GND
VT1 S C IN
VT2 S Y IN
TV1 S C OUT
TV2 S Y OUT
VT3 AV Y/V IN
VT4 AV COLOR IN
VT5 AV1 FUNCTION SW
TV3 AV V OUT
From/To 10 VIDEO INTERFACE (Page 3-36)
AV1 IN/OUT
GND (C)
Y/V OUT
V GND
C/R OUT
V IN
CN604
NC
CN602
1 PERI OUT(L)
2 PERI OUT(R)
3 GND
4 PERI IN(L)
5 PERI IN(R)
6 GND
R601 220
R602 220
From/To 04 A/S/M(AUDIO SW) CN2 (Page 3-19)
04 A/S/M(WIDE ASPECT)
Q301 2SB810HJ
Q302 2SC1740S
Q303 2SB810HJ
D302
D301
R301 330 (1/2W)
R302 39K
R303 4.7K
R304 5.1K
R305 7.5K
R306 39K
R307 22K
Q304 DTA144ES
Q305 DTA144ES
R308 1K
R309 1K
D303
D304
D305
D306
D307
R310 47K
Q306 DTC144ES
CN301
1 AV1 FUNCTION SW
2 AV2 FUNCTION SW
3 AV2
From/To 10 VIDEO INTERFACE CN501 (Page 3-38)
MW1 UNSW 12V
MW2 W A PB
MW3 N A PB
MW4 GND
WM2 FUNCTION SW
WM1 AV2
From/To 04 A/S/M (MECHACON) (Page 3-21)
WA1 AV2
From/To 04 A/S/M (AUDIO SW) (Page 3-19)
46 FLYING ERASE
Q1 2SA933S
Q2 2SC1741S(QR)
Q3 2SA933S(Q)
CN2
1 REC
2 FE CTL
3 GND
4 SWD 12V
From/To 04 A/S/M(MECHACON) CN613 (Page 3-21)
R1 47K
R2 4.7K
R3 2.2K
R4 47K
R5 22K
R10 100
C1 0.01
D1 UZ8.2BSC
L4 100
D2
L1 56
C2 0.012
C9 33P
C8 180P
L3 3.3
L2 3.3
T1
R6 100K
C4 82P
R7 120
R8 100K
C6 82P
C3 56P
R9 120
CN1
1 FLYING ERASE
2 FLYING ERASE
3 GND
From/To 42 PRE AMP CN2 (Page 3-64)
Q5 2SD639R
Q4 2SD639R

3.28 TERMINAL AND FLYING ERASE CIRCUIT BOARDS

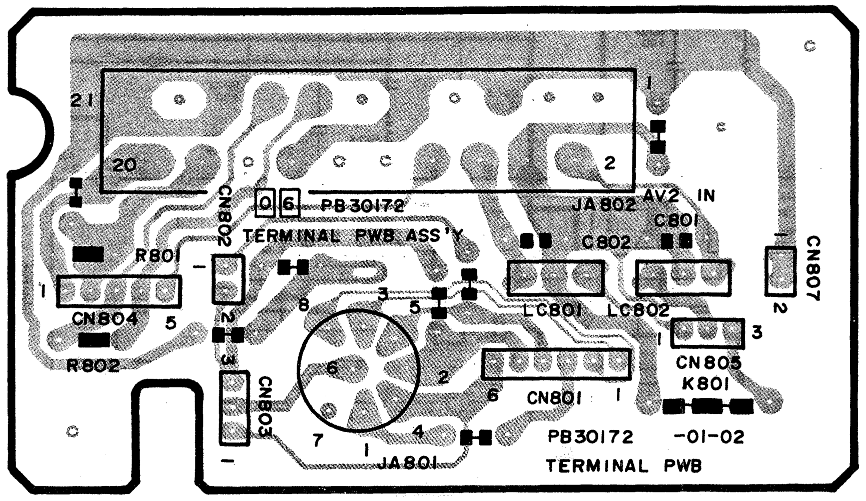


10 VIDEO INTERFACE(TERMINAL)
JA602 Y/C (S) IN
JA603 Y/C (S) OUT
AV1 IN/OUT
GND
S C IN
S Y IN
S C OUT
S Y OUT
AV Y/V IN
AV COLOR IN
AV1 FUNCTION SW
AV V OUT
From/To 10 VIDEO INTERFACE (Page 3-36)
CN604
NC
CN602
PERI OUT(L)
PERI OUT(R)
GND
PERI IN(L)
PERI IN(R)
GND
R601 220
R602 220
From/To 04 A/S/M(AUDIO SW) CN2 (Page 3-19)
20
10 ERFACE
07
04 UDIO SW)



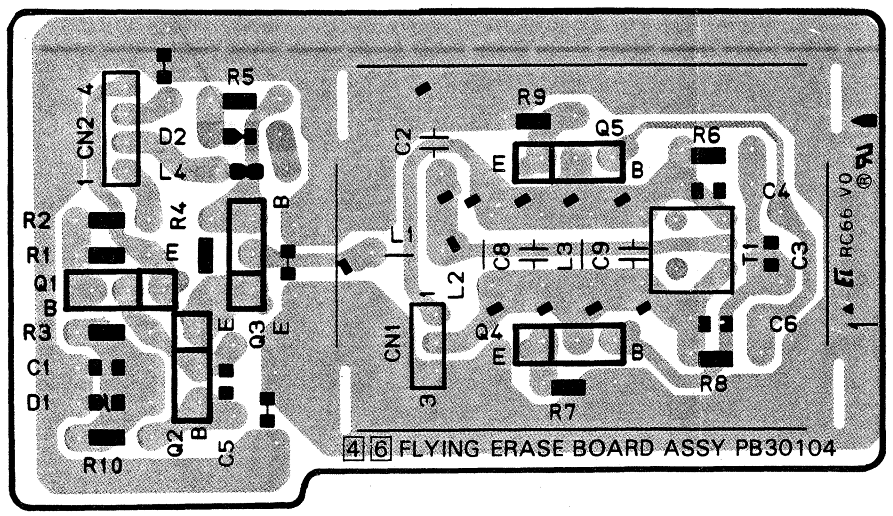
46 FLYING ERASE
Q1 2SA933S
Q2 2SC1741S(QR)
Q3 2SA933S(Q)
CN2
REC
FE CTL
GND
SWD 12V
R2 4.7K
R1 47K
R3 2.2K
R10 100
C1 0.01
D1 UZ8.2BSC
R4 47K
L4 100
D2
R5 22K
L1 56
C2 0.012
C9 33P
C8 180P
L3 3.3
L2 3.3
T1
Q4
R6 100K
C4 82P
R7 120
CN1
FLYING ERASE
FLYING ERASE
GND
Q5
R8 100K
C6 82P
R9 120
C3 56P
Q5 2SD639R
Q4 2SD639R
04
ON)

— TERMINAL —



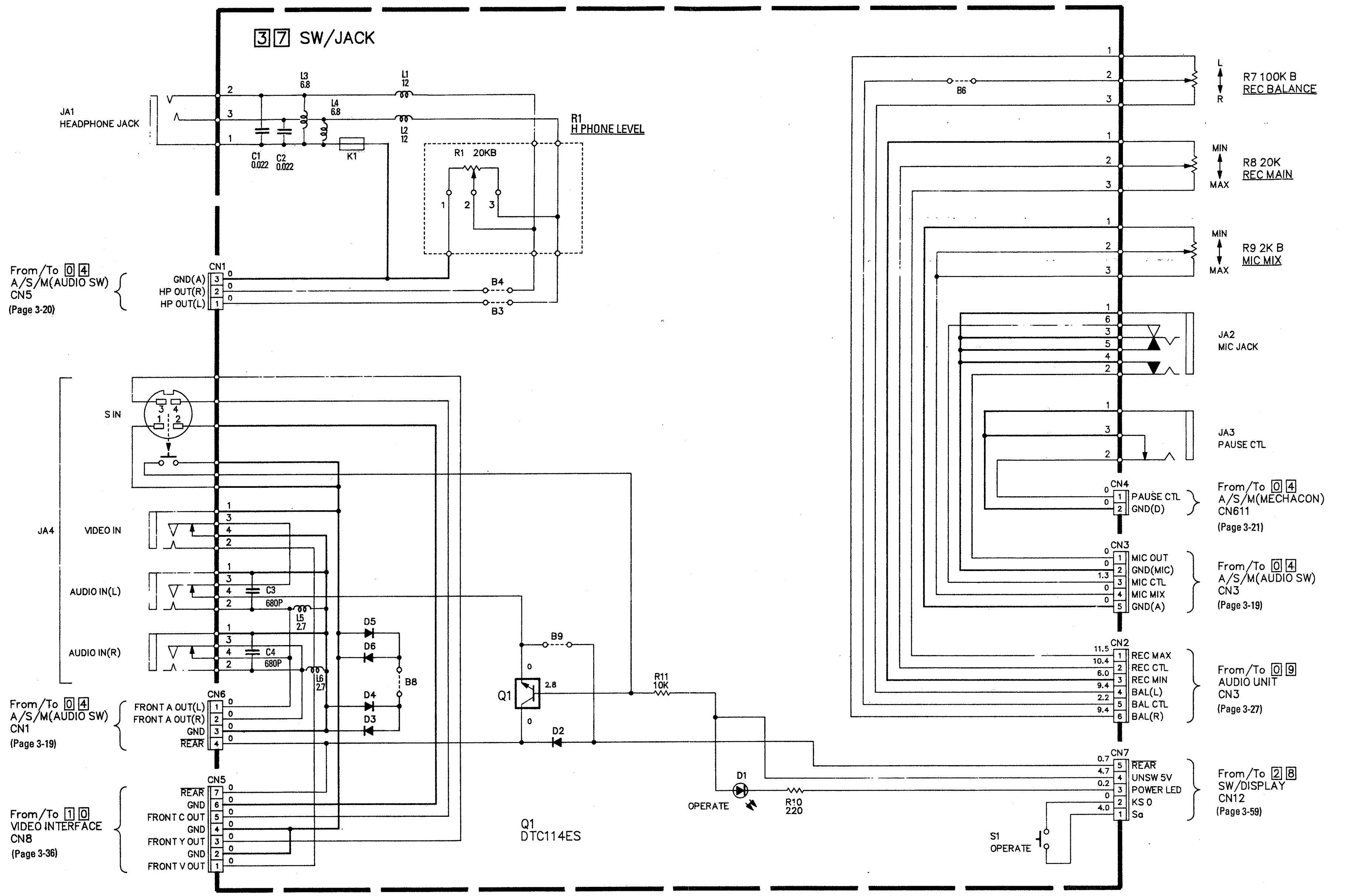
06 PB30172
TERMINAL PWB ASS'Y
JA802 AV2 IN
CN802
C801
C802
R801
CN804
LC801
LC802
CN807
CN805
K801
R802
CN803
CN801
JA801
PB30172 -01-02
TERMINAL PWB

— FLYING ERASE —

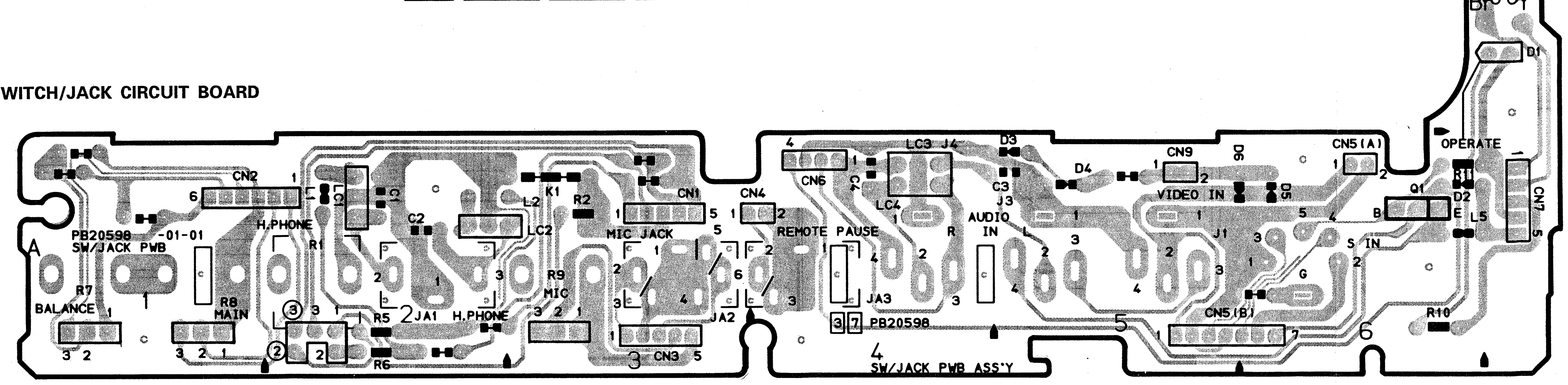


CN2
R5
D2
L4
R9
Q5
R6
C2
R2
R1
Q1
R3
C1
D1
R10
R4
Q3
Q2
C5
CN1
L1
L2
C8
L3
C9
T1
C3
C4
Q4
C6
R7
R8
46 FLYING ERASE BOARD ASSY PB30104

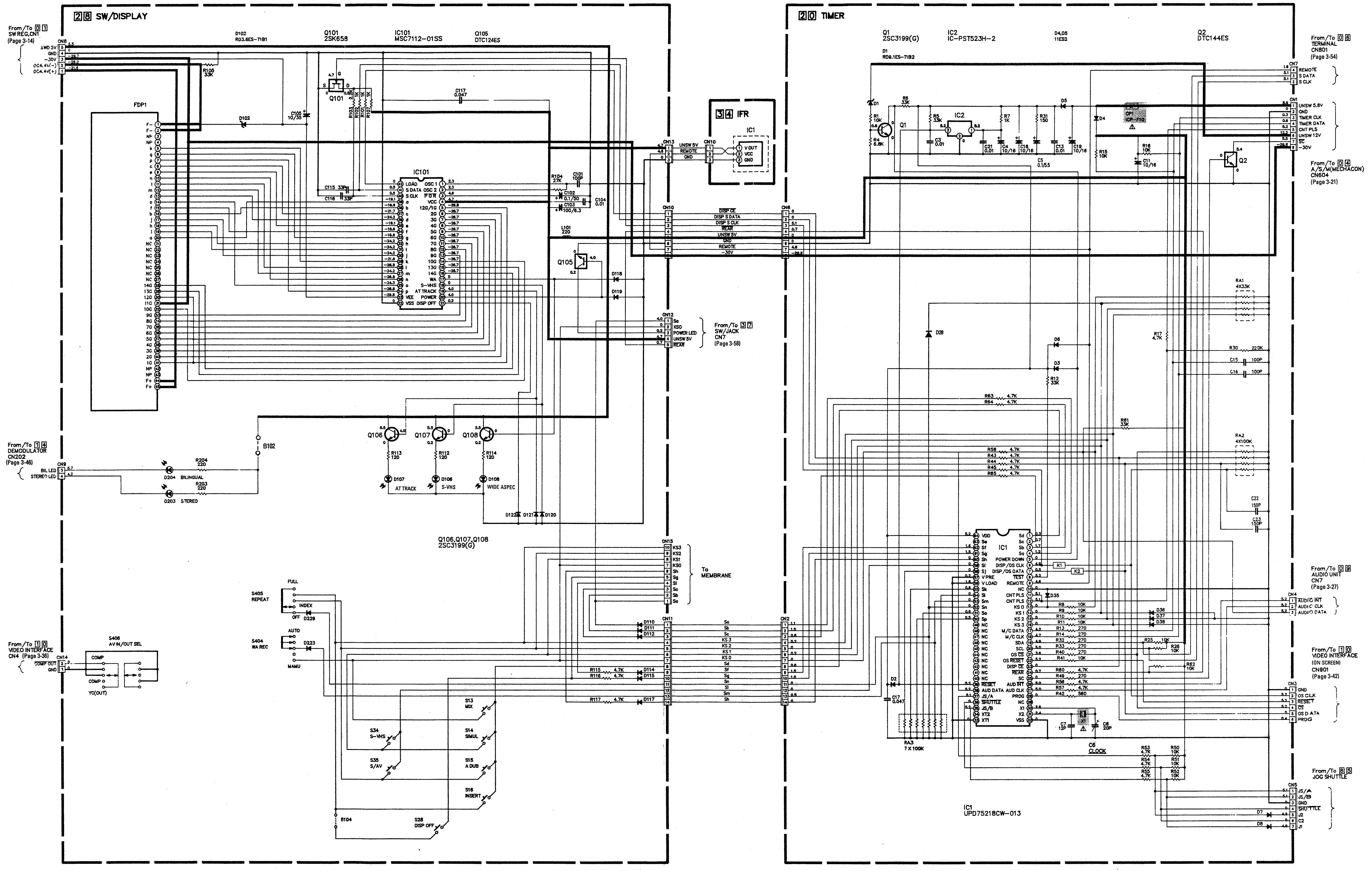
3.29 SWITCH/JACK SCHEMATIC DIAGRAM


37 SW/JACK
JA1 HEADPHONE JACK
L3 6.8
L4 6.8
L1 12
L2 12
C1 0.022
C2 0.022
K1
R1 H PHONE LEVEL
R1 20KB
From/To 04 A/S/M(AUDIO SW) CN5 (Page 3-20)
CN1
GND(A)
HP OUT(R)
HP OUT(L)
B4
B3
S IN
JA4
VIDEO IN
AUDIO IN(L)
AUDIO IN(R)
C3 680P
C4 680P
L5 2.7
L6 2.7
D5
D6
D4
D3
B8
B9
Q1
R11 10K
D2
D1
OPERATE
R10 220
Q1 DTC114ES
From/To 04 A/S/M(AUDIO SW) CN1 (Page 3-19)
CN6
FRONT A OUT(L)
FRONT A OUT(R)
GND
REAR
From/To 10 VIDEO INTERFACE CN8 (Page 3-36)
CN5
REAR
GND
FRONT C OUT
GND
FRONT Y OUT
GND
FRONT V OUT
B6
R7 100K B REC BALANCE
R8 20K REC MAIN
R9 2K B MIC MIX
MIN
MAX
JA2 MIC JACK
JA3 PAUSE CTL
CN4
PAUSE CTL
GND(D)
From/To 04 A/S/M(MECHACON) CN611 (Page 3-21)
CN3
MIC OUT
GND(MIC)
MIC CTL
MIC MIX
GND(A)
From/To 04 A/S/M(AUDIO SW) CN3 (Page 3-19)
CN2
REC MAX
REC CTL
REC MIN
BAL(L)
BAL CTL
BAL(R)
From/To 09 AUDIO UNIT CN3 (Page 3-27)
CN7
REAR
UNSW 5V
POWER LED
KS 0
So
From/To 28 SW/DISPLAY CN12 (Page 3-59)
S1 OPERATE

3.30 SWITCH/JACK CIRCUIT BOARD

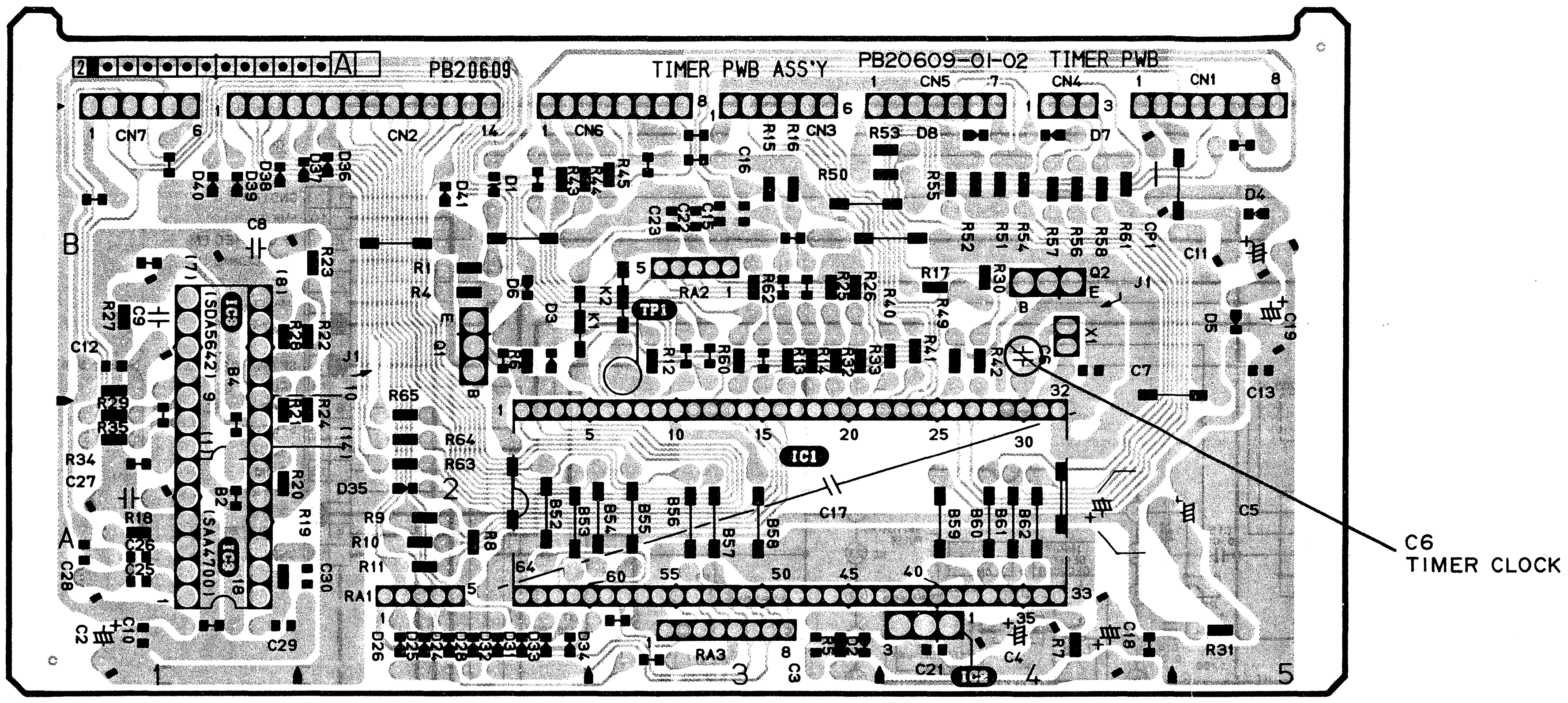

OPERATE S1
D1
OPERATE
R11
Q1
D2
L5
CN7
CN5(A)
CN9
D6
D5
D4
D3
LC3
J4
C3
J3
AUDIO IN
VIDEO IN
J1
S IN
CN5(B)
R10
CN4
CN6
C4
LC4
REMOTE PAUSE
JA3
37 PB20598
SW/JACK PWB ASS'Y
CN2
PB20598 -01-01 SW/JACK PWB
H.PHONE
R1
C2
LC2
L2
K1
R2
CN1
MIC JACK
JA2
CN3
R9 MIC
R5
R6
JA1
H.PHONE
R7 BALANCE
R8 MAIN

3.31 TIMER, SW DISPLAY AND IFR SCHEMATIC DIAGRAM

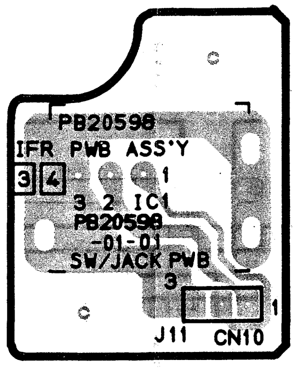

28 SW/DISPLAY
20 TIMER
34 IFR
From/To 01 SW REG,CN1 (Page 3-14)
5WD.5V
GND
−30V
DC4.4V(−)
DC4.4V(+)
CN8
D102 RD3.6ES-T1B1
Q101 2SK658
IC101 MSC7112-01SS
Q105 DTC124ES
R105 33K
FDP1
D102
C105 10/35
C117 0.047
IC101
LOAD
S DATA
S CLK
VCC
POR
OSC 1
OSC 2
VEE
VSS
POWER
DISP OFF
AT TRACK
S-VHS
WA
C115 33P
C116 33P
R104 27K
C101 100P
C102 0.1/50
C103 100/6.3
C104 0.01
L101 220
Q105
D118
D119
CN13
UNSW 5V
REMOTE
GND
CN10
IC1
VOUT
VCC
GND
CN10
DISP CE
DISP S DATA
DISP S CLK
REAR
UNSW 5V
GND
REMOTE
−30V
CN6
CN12
So
KS0
POWER LED
UNSW 5V
REAR
From/To 37 SW/JACK CN7 (Page 3-58)
Q106
Q107
Q108
R113 120
R112 120
R114 120
D107 AT TRACK
D106 S-VHS
D108 WIDE ASPEC
D122
D121
D120
B102
From/To 14 DEMODULATOR CN202 (Page 3-46)
CN9
BIL LED
STEREO LED
R204 220
D204 BILINGUAL
R203 220
D203 STEREO
Q106,Q107,Q108 2SC3199(G)
CN15
KS3
Sg
KS1
KS0
Sh
Sg
Sl
Sb
Sc
To MEMBRANE
FULL
S405 REPEAT
INDEX
OFF
D229
AUTO
S404 WA REC
D223
MANU
S406 AV IN/OUT SEL
COMP
COMP
YC(OUT)
From/To 10 VIDEO INTERFACE CN4 (Page 3-36)
CN14
COMP OUT
GND
CN11
D110
D111
D112
R115 4.7K
R116 4.7K
D114
D115
R117 4.7K
D117
CN2
S13 MIX
S14 SIMUL
S15 A DUB
S16 INSERT
S34 S-VHS
S35 S/AV
B104
S28 DISP OFF
Q1 2SC3199(G)
D1 RD6.1ES-T1B2
IC2 IC-PST523H-2
D4,D5 11ES2
Q2 DTC144ES
R1 10K
R4 6.8K
R6 33K
R5 33K
C3 0.01
C21 0.01
C4 10/16
C15 10/16
C13 0.01
C19 10/16
R7 1K
R31 150
C5 0.1/5.5
D5
D4
R15 10K
R16 10K
C11 10/16
OP1 ICP-F10
Q2
From/To 08 TERMINAL CN801 (Page 3-54)
CN7
REMOTE
S DATA
S CLK
CN1
UNSW 5.8V
GND
TIMER CLK
TIMER DATA
CNT PLS
UNSW 12V
SC
−30V
From/To 04 A/S/M(MECHACON) CN604 (Page 3-21)
RA1 4X33K
D28
R17 4.7K
D6
D3
R12 33K
R30 220K
C15 100P
C16 100P
R63 4.7K
R64 4.7K
R61 33K
RA2 4X100K
R58 4.7K
R43 4.7K
R44 4.7K
R45 4.7K
R65 4.7K
C22 150P
C23 150P
IC1
VDD
POWER DOWN
DISP/OS CLK
DISP/OS DATA
TEST
REMOTE
V PRE
V LOAD
CNT PLS
CNT PLS
KS 0
KS 1
KS 2
KS 3
M/C DATA
M/C CLK
SDA
SCL
OS CS
OS RESET
DISP CE
REAR
AUD INT
AUD CLK
AUD DATA
PROG
RESET
JS/A
SHUTTLE
JS/B
XT2
XT1
X1
X2
VSS
K1
K2
D35
R8 10K
R9 10K
R10 10K
R11 10K
R13 270
R14 270
R32 270
R33 270
R40 270
R41 10K
R60 4.7K
R49 270
R56 4.7K
R57 4.7K
R42 560
D36
D37
D38
R25 10K
R26 10K
R62 10K
D2
C17 0.047
RA3 7X100K
C7 12P
X1
C8 20P
C6 CLOCK
R53 4.7K
R54 4.7K
R55 4.7K
R50 10K
R51 10K
R52 10K
From/To 09 AUDIO UNIT CN7 (Page 3-27)
CN4
AUDIO INT
AUDIO CLK
AUDIO DATA
From/To 10 VIDEO INTERFACE (ON SCREEN) CN901 (Page 3-42)
CN3
GND
OS CLK
RESET
CS
OS DATA
PROG
From/To 85 JOG SHUTTLE
CN5
JS/A
JS/B
GND
SHUTTLE
J2
C2
J1
D7
D8
IC1 UPD75218CW-013

3.32 TIMER, SW DISPLAY AND IFR CIRCUIT BOARDS

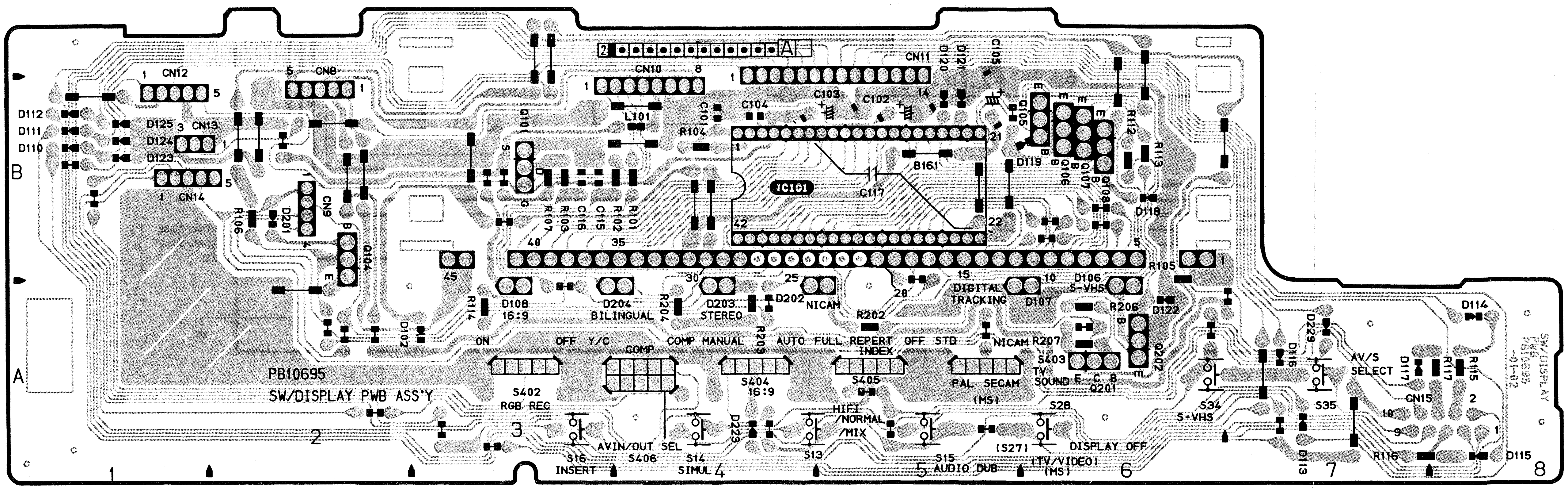
— TIMER —


PB20609
TIMER PWB ASS'Y
PB20609-01-02 TIMER PWB
CN1
CN2
CN3
CN4
CN5
CN6
CN7
IC1
IC2
IC3 (SDA5642)
IC3 (SAA4700)
TP1
RA1
RA2
RA3
Q1
Q2
X1
J1
C6
TIMER CLOCK
A
B
1
2
3
4
5

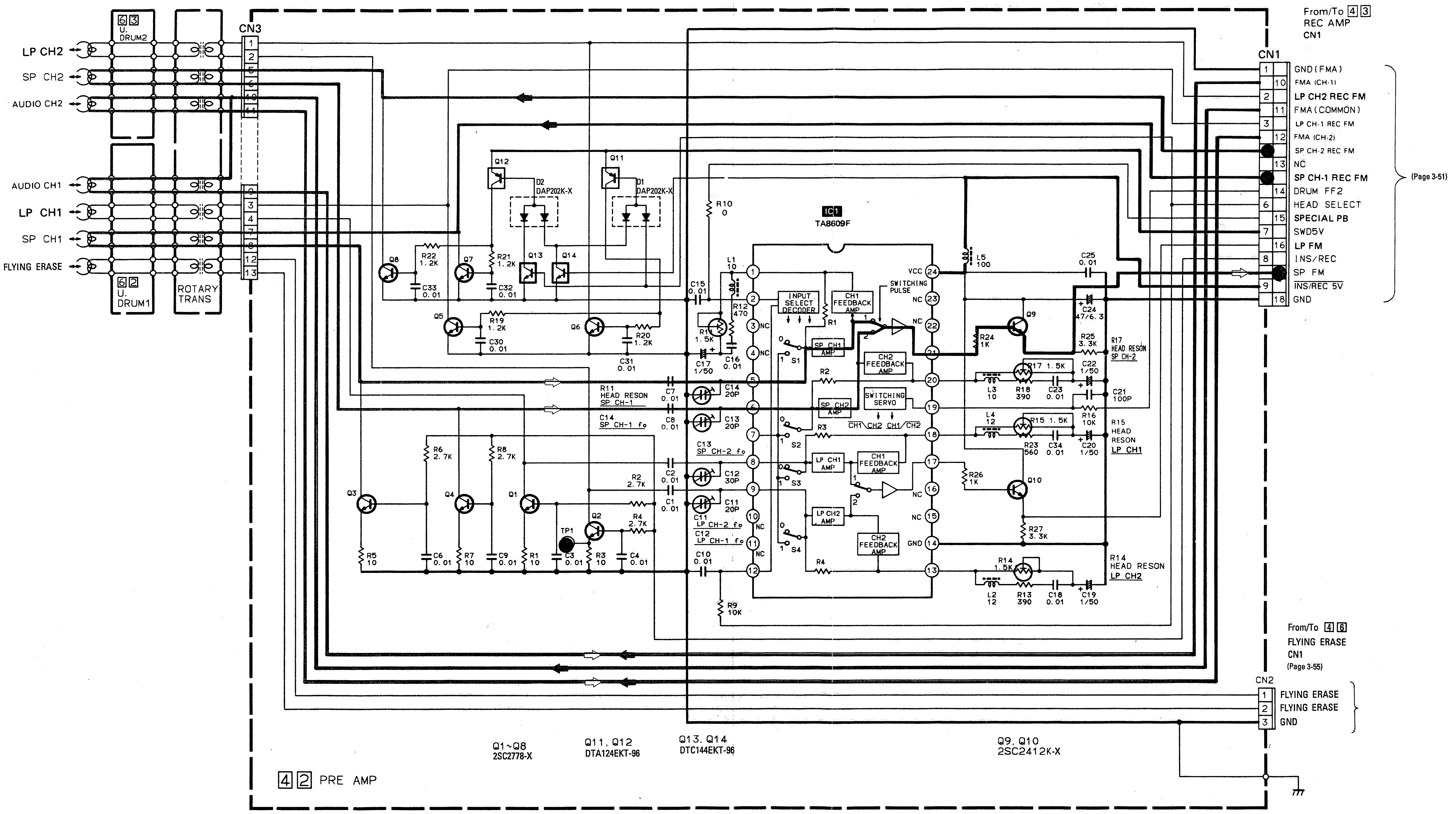
— IFR —


PB20598
IFR PWB ASS'Y
IC1
PB20598-01-01
SW/JACK PWB
J11
CN10

— SW DISPLAY —

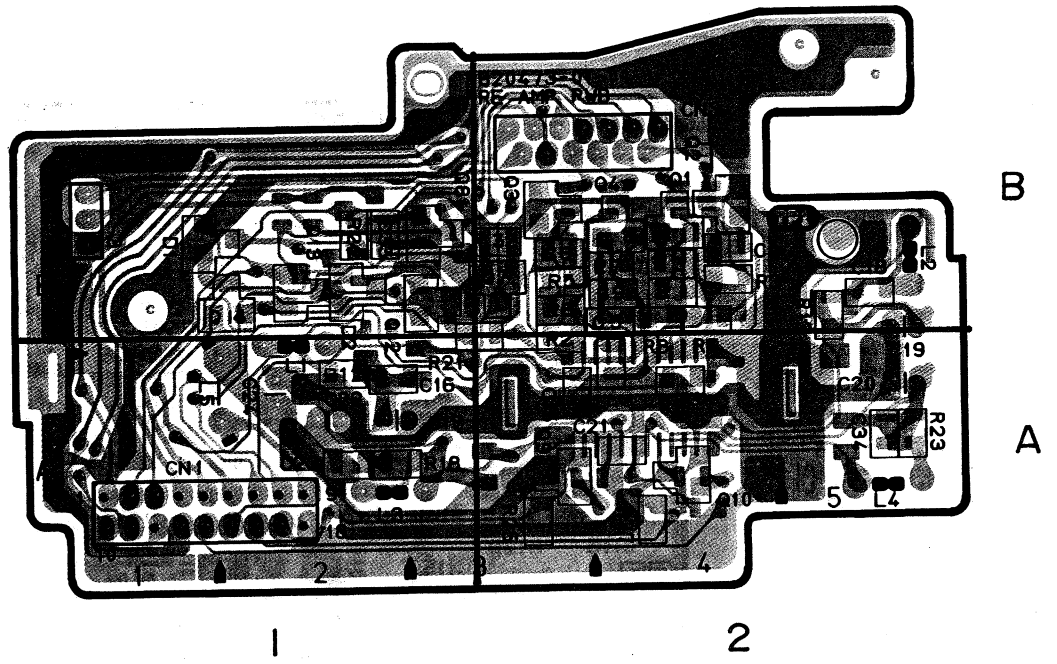

PB10695
SW/DISPLAY PWB ASS'Y
SW/DISPLAY PWB PB10695-01-02
IC101
CN8
CN9
CN10
CN11
CN12
CN13
CN14
CN15
ON
OFF
Y/C
COMP
COMP
MANUAL
AUTO
FULL
REPEAT
INDEX
OFF
STD
NICAM
D108 16:9
D204 BILINGUAL
D203 STEREO
D202 NICAM
DIGITAL TRACKING
D107
D106 S-VHS
S402 RGB REC
S406
S404 16:9
S405
PAL SECAM (MS)
S403 TV SOUND
Q201
Q202
S16 INSERT
AVIN/OUT SEL
S14 SIMUL
S13
HIFI /NORMAL /MIX
S15 AUDIO DUB
(S27) (TV/VIDEO) (MS)
S28
DISPLAY OFF
S34 S-VHS
S35
AV/S SELECT
A
B
1
2
3
4
5
6
7
8

3.33 PRE AMP SCHEMATIC DIAGRAM


LP CH2
SP CH2
AUDIO CH2
AUDIO CH1
LP CH1
SP CH1
FLYING ERASE
63 U. DRUM2
62 U. DRUM1
ROTARY TRANS
CN3
From/To 43 REC AMP CN1
CN1
GND(FMA)
FMA (CH-1)
LP CH2 REC FM
FMA(COMMON)
LP CH-1 REC FM
FMA (CH-2)
SP CH-2 REC FM
NC
SP CH-1 REC FM
DRUM FF2
HEAD SELECT
SPECIAL PB
SWD5V
LP FM
INS/REC
SP FM
INS/REC 5V
GND
(Page 3-51)
IC1 TA8609F
INPUT SELECT DECODER
CH1 FEEDBACK AMP
CH2 FEEDBACK AMP
SP CH1 AMP
SP CH2 AMP
LP CH1 AMP
LP CH2 AMP
SWITCHING SERVO
SWITCHING PULSE
VCC
NC
GND
D1 DAP202K-X
D2 DAP202K-X
R11 HEAD RESON SP CH-1
C14 SP CH-1 fo
C13 SP CH-2 fo
C11 LP CH-2 fo
C12 LP CH-1 fo
R17 HEAD RESON SP CH-2
R15 HEAD RESON LP CH1
R14 HEAD RESON LP CH2
TP1
From/To 46 FLYING ERASE CN1 (Page 3-55)
CN2
FLYING ERASE
FLYING ERASE
GND
Q1~Q8 2SC2778-X
Q11, Q12 DTA124EKT-96
Q13, Q14 DTC144EKT-96
Q9, Q10 2SC2412K-X
42 PRE AMP

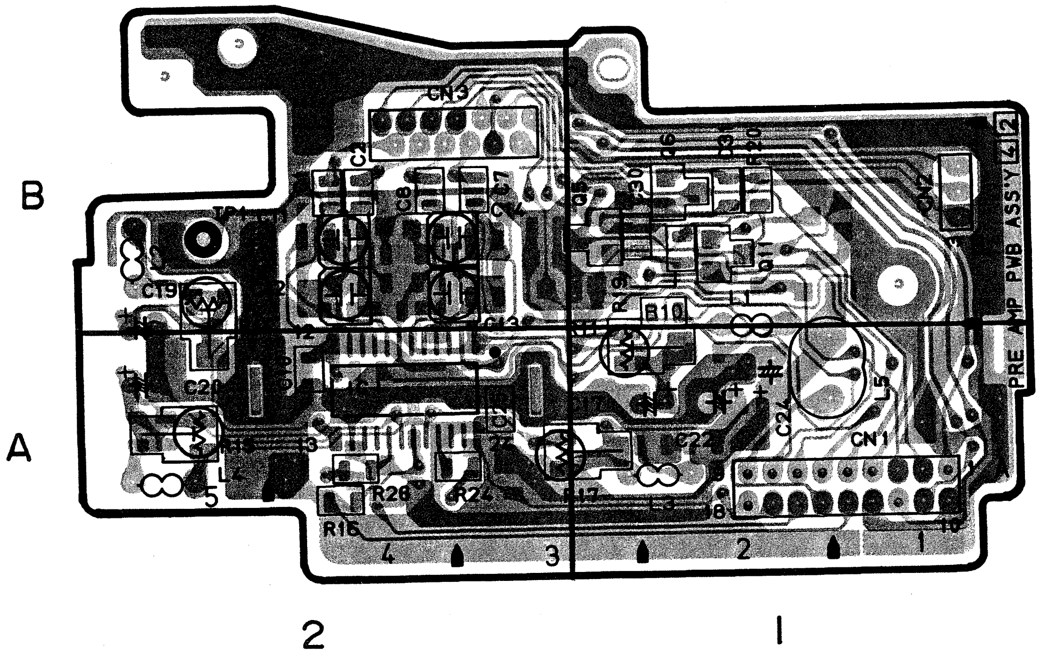
3.34 PRE AMP CIRCUIT BOARD

— COMPONENT SIDE —
(A)



B
A
1
2
CN1
R23
L4
19
5
1
2
3
4

— CODUCTOR SIDE —
(B)



B
A
2
1
CN3
CN1
PRE AMP PWB ASS'Y
C19
C20
R28
R24
R16
R10
5
4
3
2
1

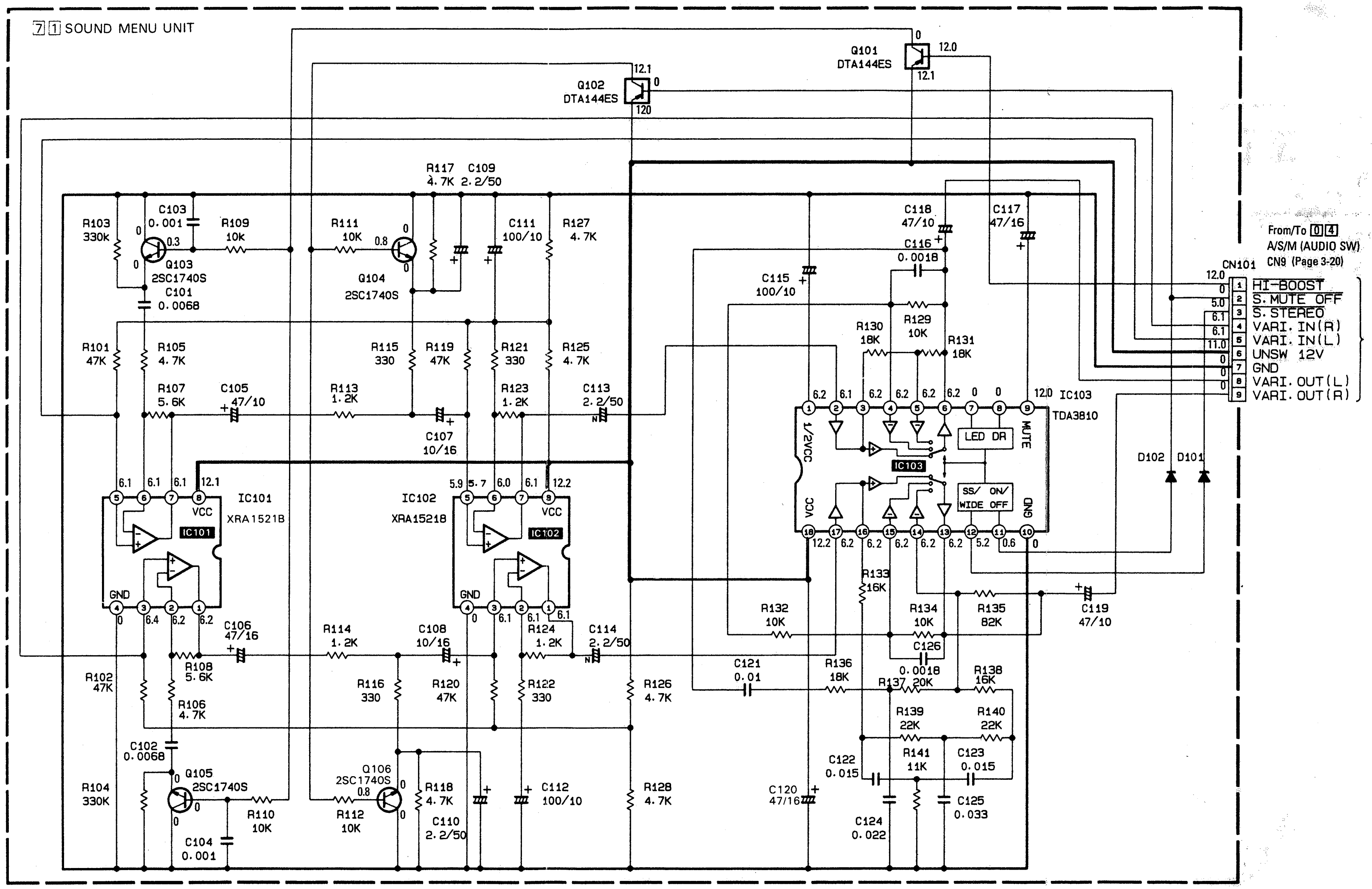
•Address of chip parts

A-1D
Address
A : Discrete parts side
B : Chip parts side

REF No.	LOCATION
IC	
IC1	B-2A
TRANSISTOR	
Q1	A-2B
Q2	A-2B
Q3	A-2B
Q4	A-2B
Q5	B-1B
Q6	B-1B
Q7	A-2B
Q8	A-1B
Q9	A-2A
Q10	A-2A
Q11	B-1B
Q12	A-1B
Q13	A-1B
Q14	A-1B
DIODE	
D1	A-1B
D2	A-1B
RESISTOR	
R1	A-2B
R2	A-2A
R3	A-2B
R4	A-2A
R5	A-2B
R6	A-2B
R7	A-2A
R8	A-2A
R9	A-2A
R10	A-1A
R11	B-1A
R12	B-1A
R13	A-2A
R14	B-2A
R15	B-2A
R16	B-2A
R17	B-1A
R18	A-1A
R19	B-1B
R20	B-1B
R21	A-1A
R22	A-1B
R23	A-2A
R24	B-2A
R25	A-2A
R26	B-2A
R27	A-2A

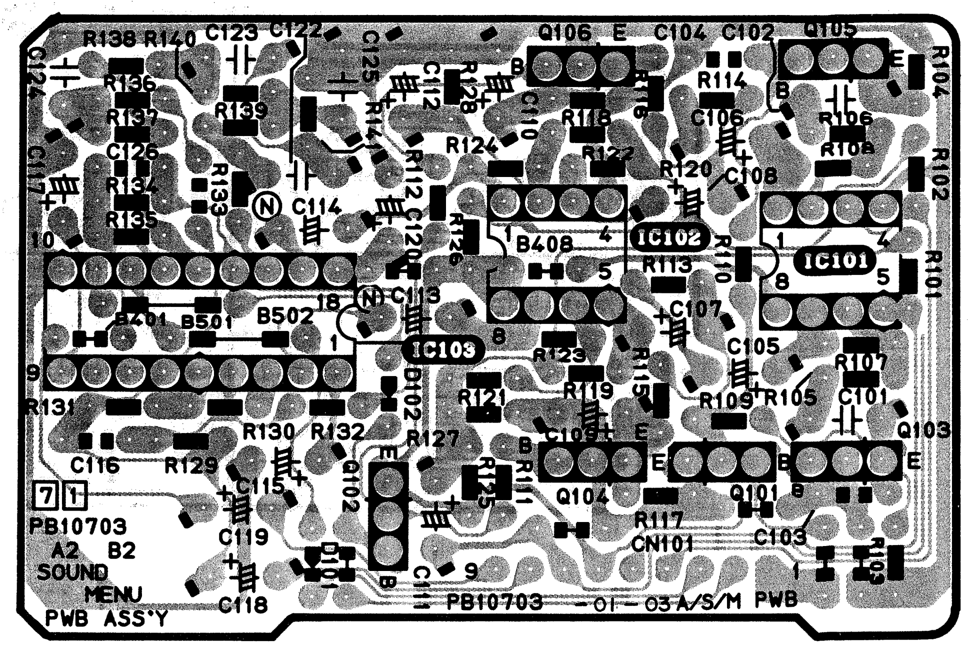
REF No.	LOCATION
CAPACITOR	
C1	B-2B
C2	B-2B
C3	A-2B
C4	A-2B
C6	A-2B
C7	B-2B
C8	B-2B
C9	A-2B
C10	B-2A
C11	B-2B
C12	B-2B
C13	B-2B
C14	B-2B
C15	A-2A
C16	A-1A
C18	A-2B
C21	A-2A
C23	A-1A
C25	B-2A
C30	B-1B
C31	B-1B
C32	A-2B
C33	A-1B
C34	A-2A

3.35 SOUND MENU SCHEMATIC DIAGRAM



7 1 SOUND MENU UNIT
Q101 DTA144ES
Q102 DTA144ES
Q103 2SC1740S
Q104 2SC1740S
Q105 2SC1740S
Q106 2SC1740S
IC101 XRA1521B
IC102 XRA1521B
IC103 TDA3810
R101 47K
R102 47K
R103 330k
R104 330K
R105 4.7K
R106 4.7K
R107 5.6K
R108 5.6K
R109 10k
R110 10K
R111 10K
R112 10K
R113 1.2K
R114 1.2K
R115 330
R116 330
R117 4.7K
R118 4.7K
R119 47K
R120 47K
R121 330
R122 330
R123 1.2K
R124 1.2K
R125 4.7K
R126 4.7K
R127 4.7K
R128 4.7K
R129 10K
R130 18K
R131 18K
R132 10K
R133 16K
R134 10K
R135 82K
R136 18K
R137 20K
R138 16K
R139 22K
R140 22K
R141 11K
C101 0.0068
C102 0.0068
C103 0.001
C104 0.001
C105 47/10
C106 47/16
C107 10/16
C108 10/16
C109 2.2/50
C110 2.2/50
C111 100/10
C112 100/10
C113 2.2/50
C114 2.2/50
C115 100/10
C116 0.0018
C117 47/16
C118 47/10
C119 47/10
C120 47/16
C121 0.01
C122 0.015
C123 0.015
C124 0.022
C125 0.033
C126 0.0018
D101
D102
GND
VCC
1/2VCC
LED DR
SS/ WIDE
ON/ OFF
MUTE
CN101
From/To 0 4
A/S/M (AUDIO SW)
CN9 (Page 3-20)
1 HI-BOOST
2 S. MUTE OFF
3 S. STEREO
4 VARI. IN(R)
5 VARI. IN(L)
6 UNSW 12V
7 GND
8 VARI. OUT(L)
9 VARI. OUT(R)

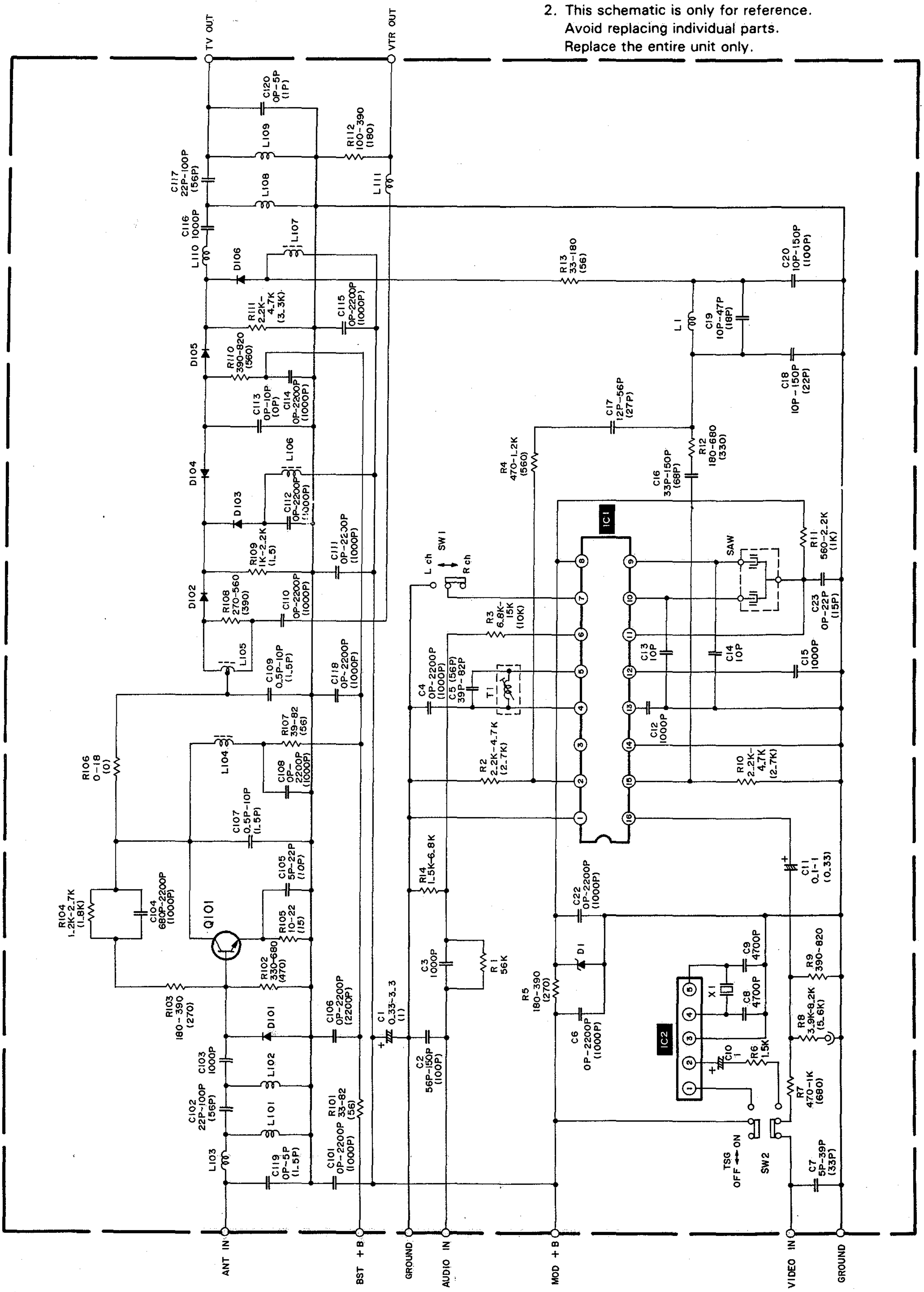
3.36 SOUND MENU CIRCUIT BOARD



7 1
PB10703
A2 B2
SOUND MENU
PWB ASS'Y
PB10703 -01-03 A/S/M PWB
IC101
IC102
IC103
Q101
Q102
Q103
Q104
Q105
Q106
CN101
B401
B408
B501
B502

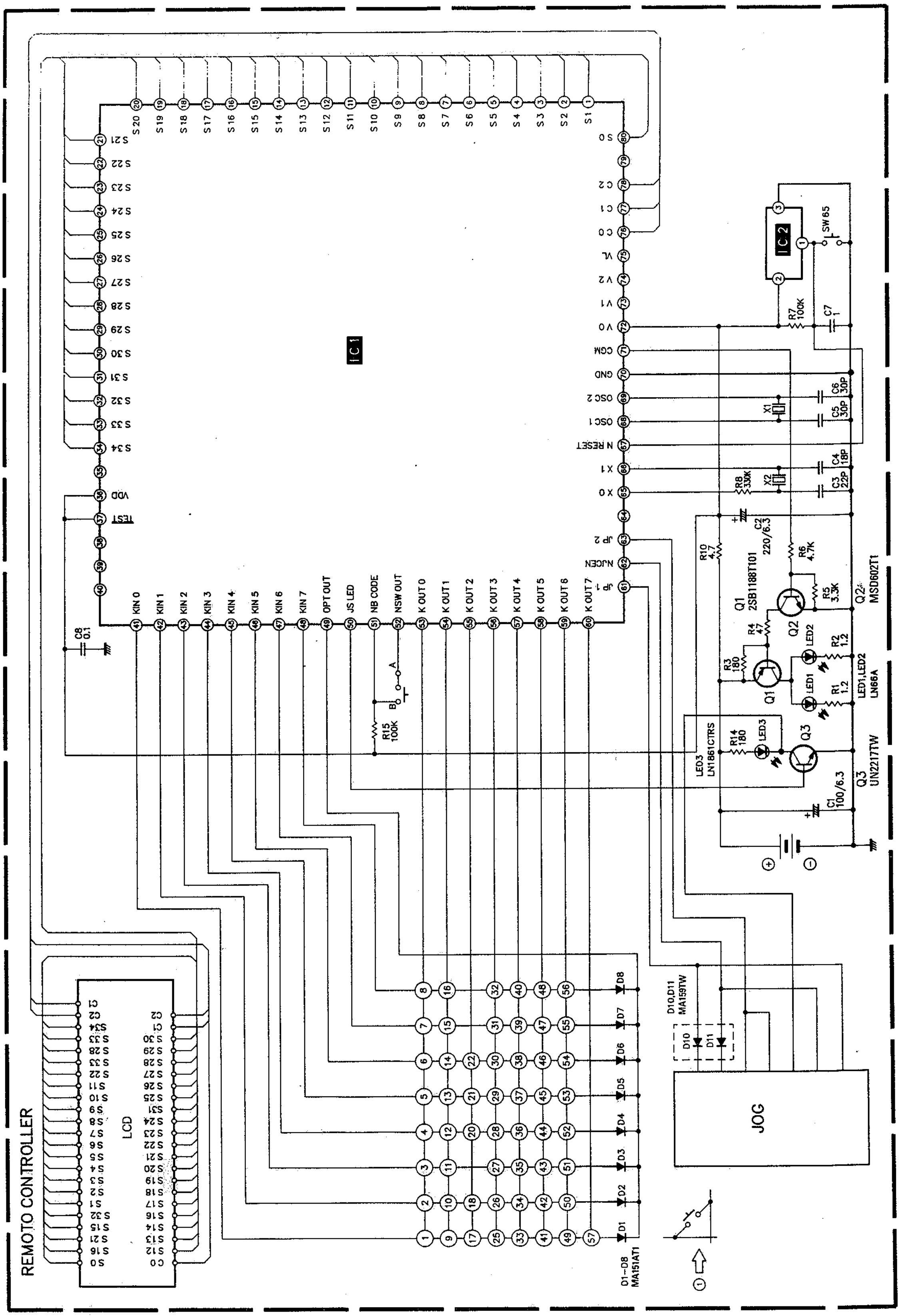
3.37 RF CONVERTER SCHEMATIC DIAGRAM

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.


TV OUT
VTR OUT
C120 0P-5P (1P)
L109
R112 100-390 (180)
C117 22P-100P (56P)
L108
L111
C116 1000P
L110
D106
L107
R111 2.2K-4.7K (3.3K)
C115 0P-2200P (1000P)
R13 33-180 (56)
C20 10P-150P (100P)
L1
C19 10P-47P (18P)
D105
R110 390-820 (560)
C113 0P-10P (0P)
C114 0P-2200P (1000P)
C18 10P-150P (22P)
C17 12P-56P (27P)
R4 470-1.2K (560)
R12 180-680 (330)
C16 33P-150P (68P)
D104
L106
D103
C112 0P-2200P (1000P)
C111 0P-2200P (1000P)
R109 1K-2.2K (1.5)
IC1
L ch
SW1
R ch
SAW
R11 560-2.2K (1K)
D102
R108 270-560 (390)
C110 0P-2200P (1000P)
C23 0P-22P (15P)
R3 6.8K-15K (10K)
C13 10P
C14 10P
C15 1000P
L105
C109 0.5P-10P (1.5P)
C118 0P-2200P (1000P)
C4 0P-2200P (1000P)
C5 (56P) 39P-82P
T1
C12 1000P
R106 0-18 (0)
L104
R107 39-82 (56)
C108 0P-2200P (1000P)
R2 2.2K-4.7K (2.7K)
R10 2.2K-4.7K (2.7K)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
C107 0.5P-10P (1.5P)
R14 1.5K-6.8K
C11 0.1-1 (0.33)
C105 5P-22P (10P)
C22 0P-2200P (1000P)
R104 1.2K-2.7K (1.8K)
C104 680P-2200P (1000P)
Q101
R105 10-22 (15)
D1
C9 4700P
R9 390-820
C3 1000P
R1 56K
R102 330-680 (470)
R5 180-390 (270)
X1
C8 4700P
R103 180-390 (270)
D101
C106 0P-2200P (2200P)
C1 0.33-3.3 (1)
C6 0P-2200P (1000P)
IC2
C10 1
R6 1.5K
R8 3.9K-8.2K (5.6K)
C103 1000P
L102
C2 56P-150P (100P)
R7 470-1K (680)
C102 22P-100P (56P)
L101
R101 33-82 (56)
L103
C119 0P-5P (1.5P)
C101 0P-2200P (1000P)
TSG OFF ON
SW2
C7 5P-39P (33P)
ANT IN
BST +B
GROUND
AUDIO IN
MOD +B
VIDEO IN
GROUND

3.38 REMOTE CONTROL SCHEMATIC DIAGRAM

NOTES: 1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.


REMOTO CONTROLLER
IC 1
IC 2
SW 65
S 1 … S 34
S 0
C 0
C 1
C 2
VL
V 2
V 1
V 0
COM
GND
OSC 2
OSC 1
N RESET
X 1
X 0
JP 2
NJCEN
JP 1
VDD
TEST
KIN 0 … KIN 7
OPT OUT
JS LED
NB CODE
NSW OUT
K OUT 0 … K OUT 7
C8 0.1
R15 100K
R7 100K
C7 1
C6 30P
C5 30P
X1
C4 18P
C3 22P
X2
R8 330K
C2 220/6.3
R10 4.7
R6 4.7K
Q1 2SB1188T101
R5 3.3K
Q2 MSD602T1
R4 47
R3 180
R2 1.2
R1 1.2
LED1,LED2 LN66A
LED3 LN1861CTRS
R14 180
Q3 UN2217TW
C1 100/6.3
D10,D11 MA159TW
D1–D8 MA151AT1
LCD
JOG
A
B
6
5
4
3
2
1
A
B
C
D

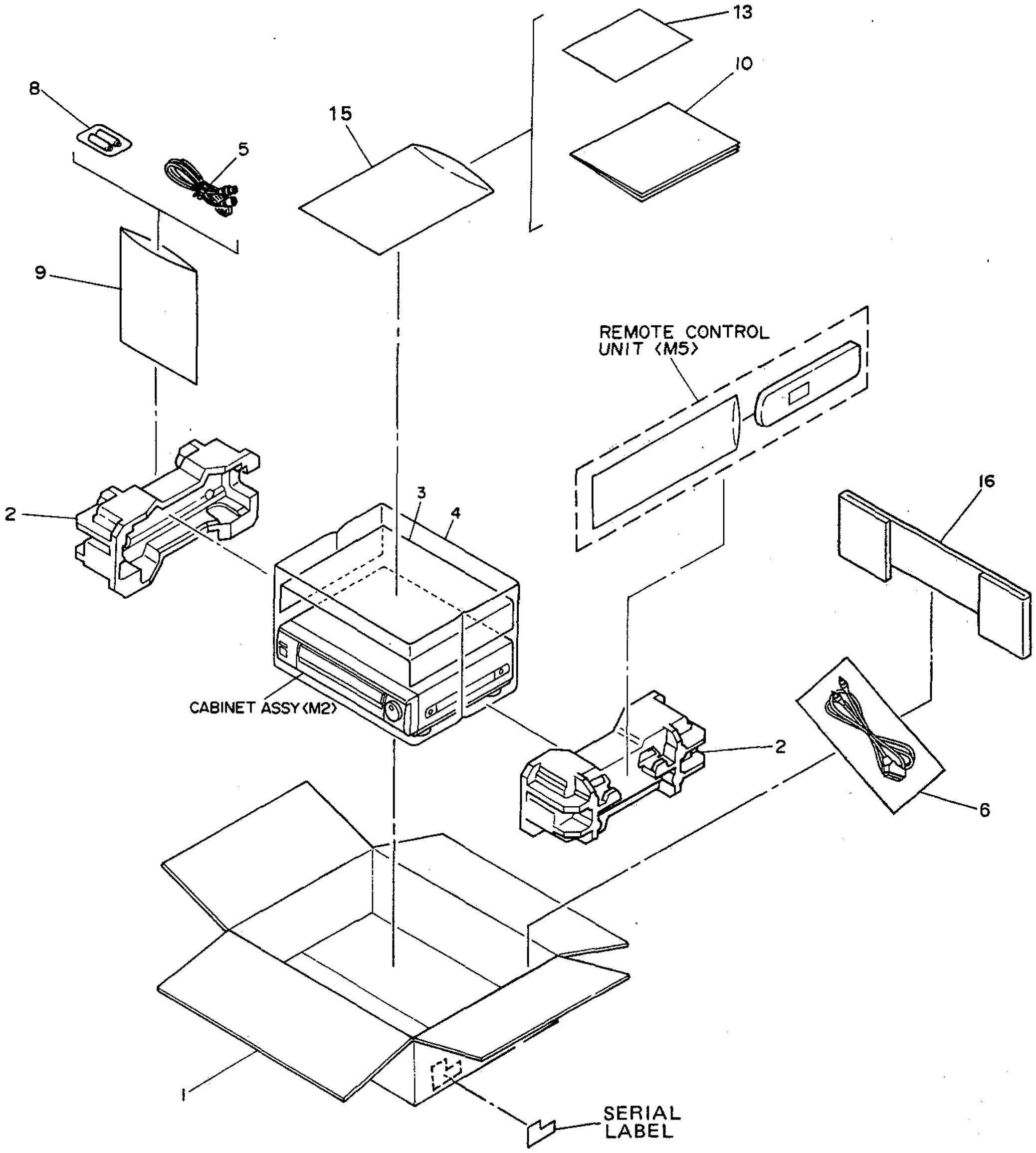
Key No.	Key MAME
1	TV STANDBY
2	TV/AUX
3	TV PROG ∧
4	TV PROG ∨
5	TV VOL +
6	TV VOL −
7	0
8	1
9	2
10	3
11	4
12	5
13	6
14	7
15	8
16	9
17	VPS/CH
18	TIMED PAGE
19	
20	TV CODE
21	TRANS
22	CLOCK ADJ
23	
24	
25	REC
26	SCENE CTL
27	MENU/TEXT
28	SUMMER TIME ADJ
29	JOG/SHUTTLE
30	CANCEL
31	INDEX ←
32	SET −
33	SELECT
34	SET +
35	OPERATE
36	EJECT
37	INDEX(PAGE −)
38	STORE
39	PAUSE
40	V. SEARCH <<
41	SKIP/BLANK
42	V. SEARCH >>
43	REW
44	PLAY
45	F.F.
46	STOP
47	TV/VTR
48	TIMER
49	INTOR(PAGE +)
50	SP/LP
51	CH SEARCH
52	INDEX →
53	LARGE/NORMAL
54	SOUND MENU
55	PROG.
56	DISPLAY
57	OSD

SECTION 4
EXPLODED VIEWS AND PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

4.1 PACKING ASSEMBLY < M1 >

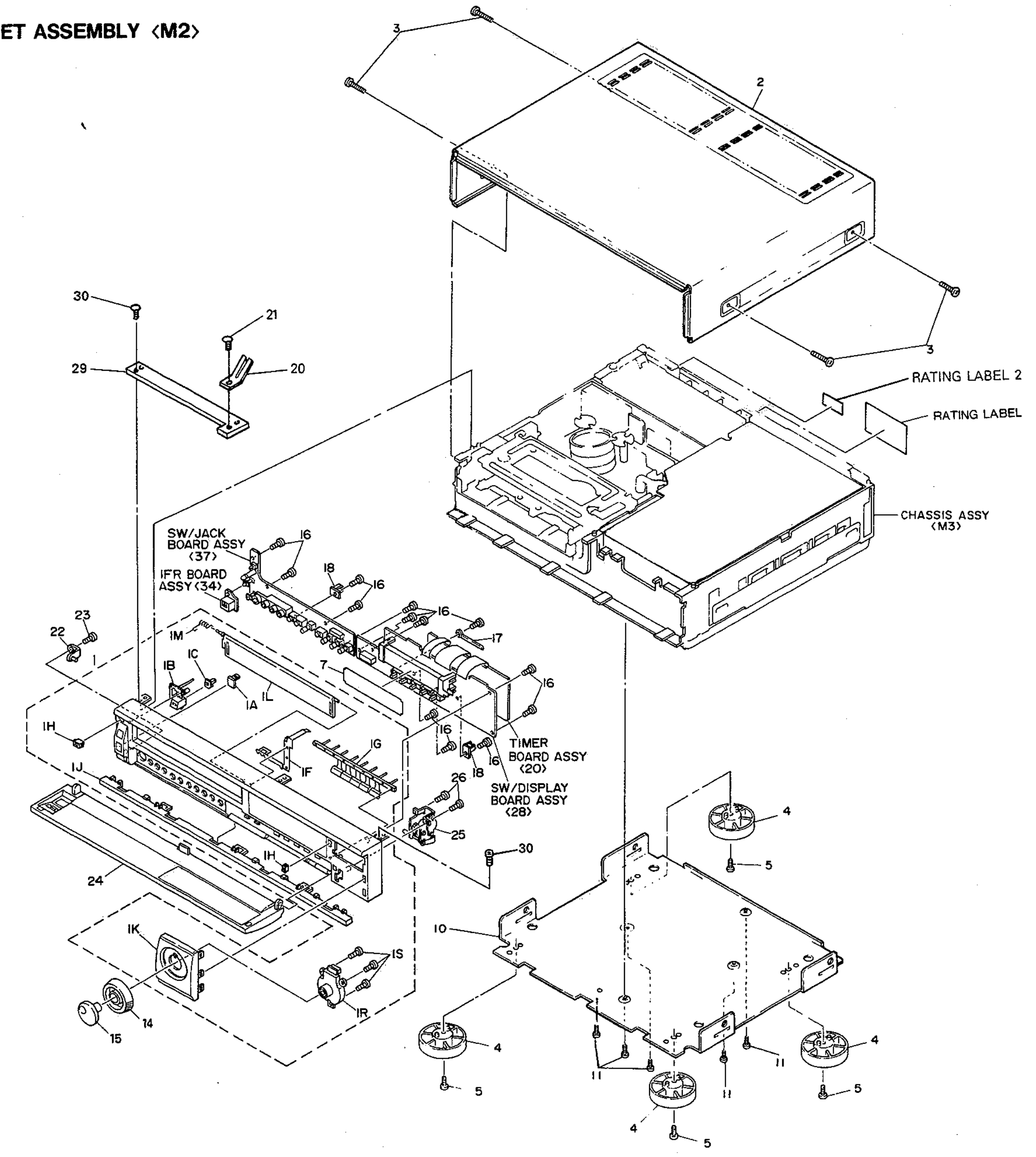

13
10
8
15
5
9
REMOTE CONTROL UNIT ⟨M5⟩
16
3
4
2
CABINET ASSY⟨M2⟩
2
6
1
SERIAL LABEL

****

PACKING ASSEMBLY < M1 >

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	PQ34728	PACKING CASE
2	PQ34503A-2	CUSHION ASSY
3	PU57777	WADDING PAPER
4	PQM30021-82	POLY BAG
5	PU59168-3	RF CABLE
	or PU59167-3	RF CABLE
6	PEAC0030-02	PERI CABLE
8	UM-3DJ2P	BATTERY,X2
9	QPGA020-02005	POLY BAG
⚠ 10	PU30425-1354	INSTRUCTIONS
13	BT-20122	WARRANTY CARD
15	QPGA025-03505	POLY BAG
16	PQ34729	SPACER

4.2 CABINET ASSEMBLY ⟨M2⟩

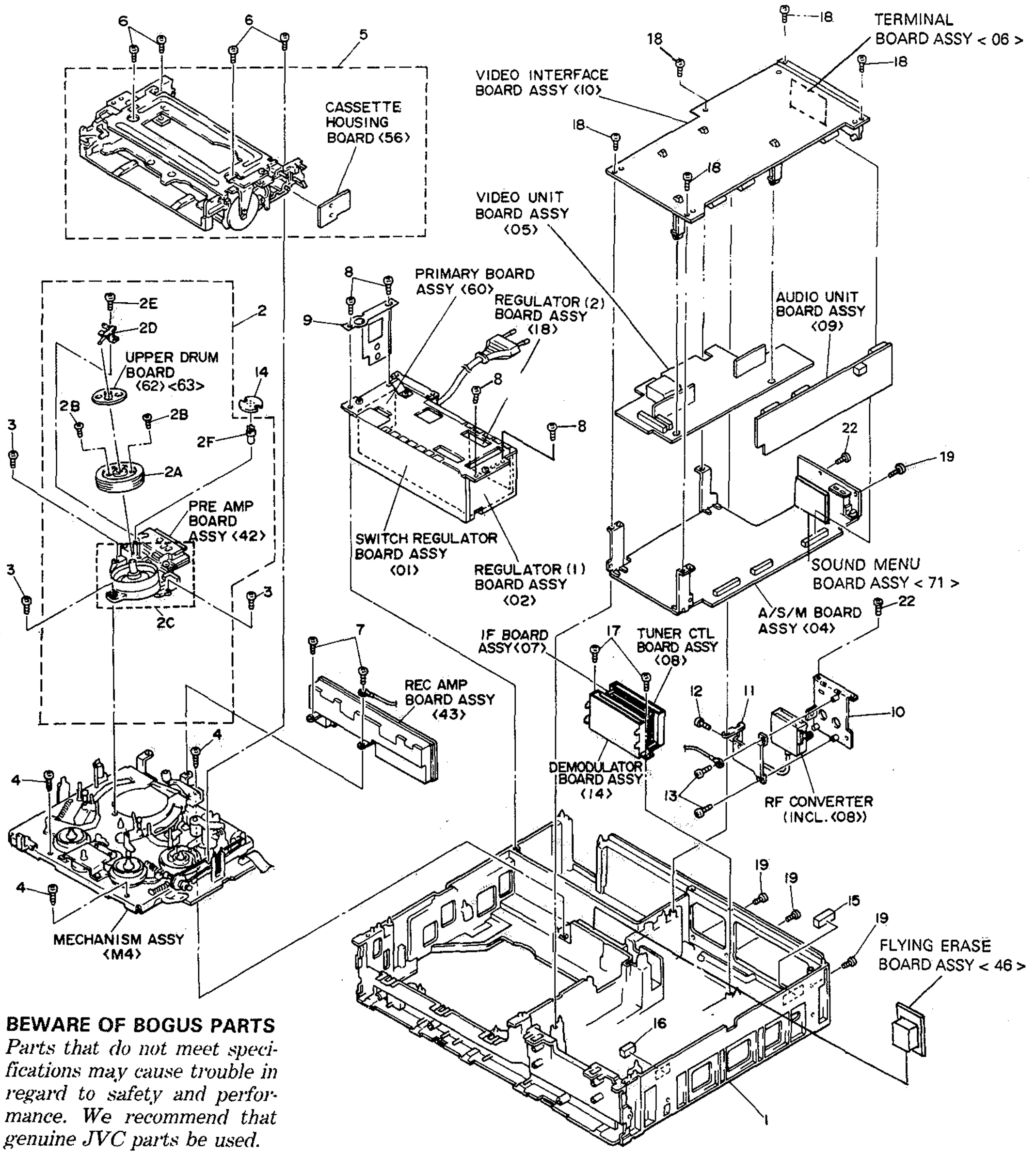

3
2
3
RATING LABEL 2
RATING LABEL
CHASSIS ASSY ⟨M3⟩
30
21
29
20
SW/JACK BOARD ASSY ⟨37⟩
IFR BOARD ASSY ⟨34⟩
16
18
16
16
17
23
22
1
1M
1B
1C
1A
1L
7
16
1H
1G
1F
16
18
16
TIMER BOARD ASSY ⟨20⟩
SW/DISPLAY BOARD ASSY ⟨28⟩
26
25
30
1J
24
1H
4
5
10
1K
1S
1R
14
15
4
5
11
11
11
4
5
4
5

****

CABINET ASSEMBLY <M2>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 1	PQ11392Q-9	FRONT PANEL ASSY
1A	PQ45763-1-1	WINDOW(IR)
1B	PQ34403-3-1	BUTTON(POWER)
1C	PQ45762-1-1	INDICATOR(POWER)
1F	PQ34409-1-1	PLATE(EARTH)
1G	PQ21416-9	BUTTON
1H	PU59891-2	MAGNET ASSY,X2
1J	PQ21165-7-3	COVER(FRONT)
1K	PQ21415-1-2	COVER
1L	PQ21414-3-3	CASSETTE DOOR
1M	PQ45704	TORSION SPRING
1R	PEME0886	JOG SHUTTLE ASSY
1S	SDSF2605Z	SCREW,X3 FOR JOG SHUTTLE ASSY
⚠ 2	PQ11011-6	TOP COVER
3	PQ43827	SPECIAL SCREW,X4 FOR TOP COVER
4	PQ43945A-3	FOOT ASSY,X4
5	SDSF3010Z	SCREW,X4 FOR FOOT
7	PQ45990	FILTER
⚠ 10	PQ11025-1-5	BOTTOM COVER
11	SDSG3008Z	SCREW,X5 FOR BOTTOM COVER
14	PQ34405-1-4	KNOB(SHUTTLE)
15	PQ34526B-3	KNOB(JOG)ASSY
16	SDSF2608Z	SCREW,X13 FOR T/D/S/J BOARD
17	PU49485-4	WIRE CLAMP,FOR SW/DISP BOARD
18	YU40328-2	WIRE.CLAMP,X2
20	PQ41556	EARTH PLATE
21	GPSF2610Z	SCREW,FOR EARTH PLATE
22	PQ45838A-2	SHAFT ASSY
23	SDSF2608Z	SCREW,FOR SHAFT ASSY
24	PQ11450Q	DOOR ASSY
25	PQ34436A	DAMPER UNIT ASSY
26	SDSF2608Z	SCREW,X2 FOR DAMPER UNIT ASSY
29	PQ34683	PLATE (SUPPORT)
30	GPSF2610Z	SCREW,X2 FOR FRONT PANEL

4.3 CHASSIS ASSEMBLY <M3>


6
6
5
CASSETTE HOUSING BOARD <56>
VIDEO INTERFACE BOARD ASSY <10>
18
18
TERMINAL BOARD ASSY < 06 >
18
18
18
VIDEO UNIT BOARD ASSY <05>
8
PRIMARY BOARD ASSY <60>
REGULATOR (2) BOARD ASSY <18>
9
8
8
AUDIO UNIT BOARD ASSY <09>
2E
2D
2
UPPER DRUM BOARD <62><63>
14
2B
2B
2F
3
2A
PRE AMP BOARD ASSY <42>
SWITCH REGULATOR BOARD ASSY <01>
REGULATOR (1) BOARD ASSY <02>
22
19
SOUND MENU BOARD ASSY < 71 >
3
3
2C
A/S/M BOARD ASSY <04>
22
7
IF BOARD ASSY<07>
17
TUNER CTL BOARD ASSY <08>
REC AMP BOARD ASSY <43>
12
11
10
DEMODULATOR BOARD ASSY <14>
13
RF CONVERTER (INCL.<08>)
4
4
4
19
19
15
19
FLYING ERASE BOARD ASSY < 46 >
MECHANISM ASSY <M4>
16
1

BEWARE OF BOGUS PARTS
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

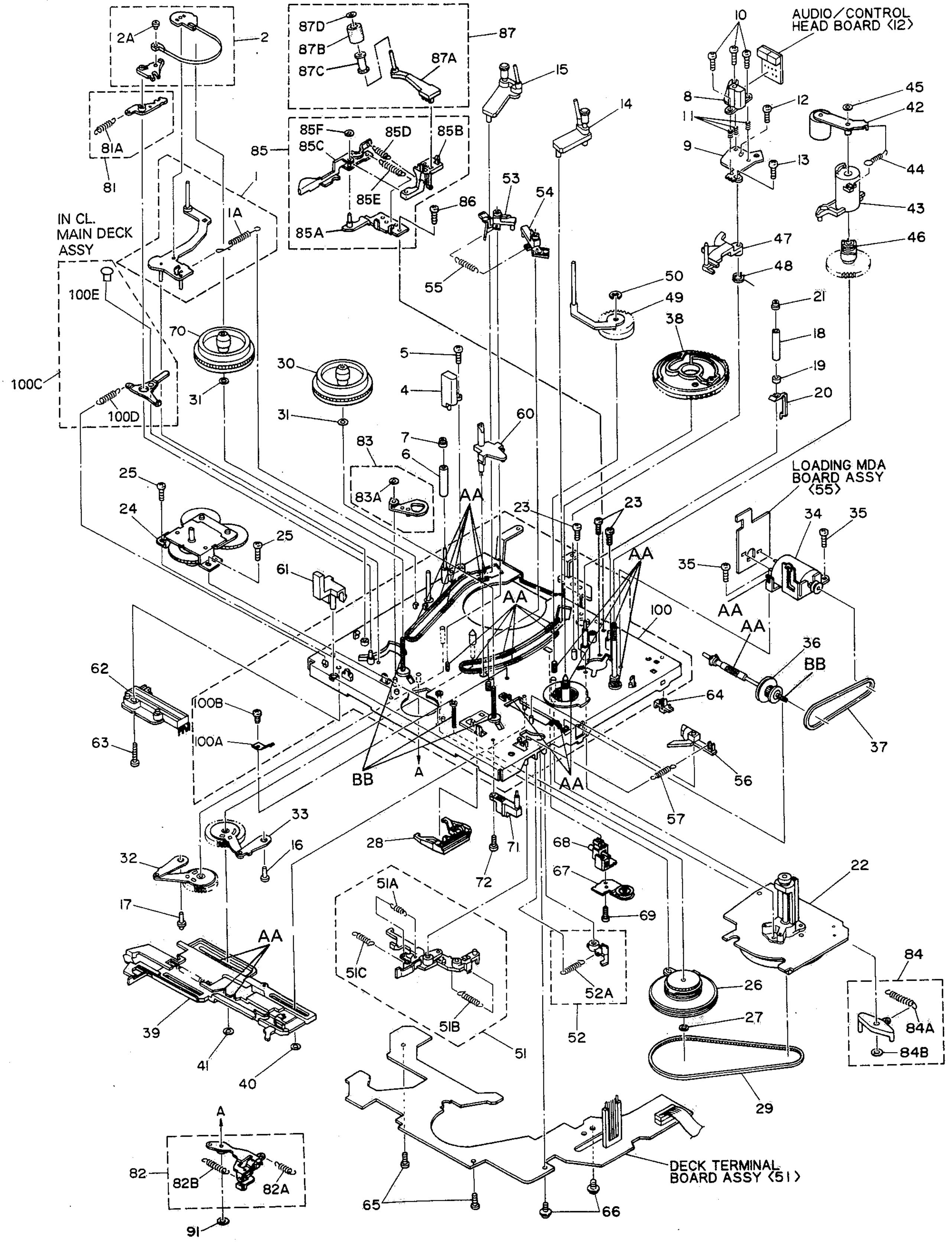
****

CHASSIS ASSEMBLY <M3>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 1	PQ10995-3-11	BOTTOM CHASSIS
2	PDV2215A	DRUM ASSY
2A	PDM2119C	UPPER DRUM ASSEMBLY
2B	PDM4165A	DRUM SCREW ASSY,X2
2C	PDM2138Q	LOWER DRUM MOTOR ASSY
2D	PDM4229A-1	BRUSH ASSY
2E	SPSG2606Z	SCREW
2F	PDM4226A	ROLLER ASSY
3	SDST2610Z	SCREW,X3 FOR DRAM ASSY
4	PQ43831	SPECIAL SCREW,X3 FOR MEIN DECK
5	PUS29499D	CASSETTE HOUSING ASSY

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
6	SDST2608Z	SCREW,X4 FOR CASSETTE HOUSIN
7	SDST2606Z	SCREW,X2 FOR REC BOARD
8	SDSF3010Z	SCREW,X4 FOR SW REGULATER
9	PQ44940-1-1	PLATE(EARTH)
⚠ 10	PQ21038-12	TERMINAL BOARD
11	PQ33380	BRACKET
12	SDST2606Z	SCREW,FOR RF CONVERTER
13	SDSF2608Z	SCREW,X2 FOR RF CONVERTER
14	PQ45160	INERTIA PLATE
15	PQM30029-153	SPACER
16	PQM30029-161	SPACER
17	SDSF3010Z	SCREW,X2 FOR TUNER UNIT
18	SDSF3010Z	SCREW,X5 FOR VIDEO BOARD
19	SDSF3010M	SCREW,X4 FOR REAR PANEL
22	SDSF3010Z	SCREW,FOR TERMINAL

4.4 MECHANISM ASSEMBLY < M4 >


2A
2
87D
87B
87C
87A
87
15
14
10
AUDIO/CONTROL HEAD BOARD <12>
8
45
42
12
11
9
13
44
43
81A
81
85F
85C
85D
85B
85
85E
85A
86
53
54
1
1A
IN CL. MAIN DECK ASSY
47
46
48
50
49
38
55
21
18
19
20
100E
70
30
5
4
100C
31
100D
31
60
83
7
6
83A
AA
25
24
25
23
23
LOADING MDA BOARD ASSY <55>
34
35
35
61
AA
AA
AA
100
AA
AA
36
BB
62
64
37
100B
100A
63
BB
A
AA
56
57
33
16
28
71
68
32
72
22
67
69
17
51A
AA
51C
52A
26
84
39
51B
27
84A
41
51
52
84B
40
29
A
82
82B
82A
DECK TERMINAL BOARD ASSY <51>
65
66
91

Category	Part number	MARK
Grease	KANTO-G-31KAV	AA
Oil	COSMO-HV56	BB

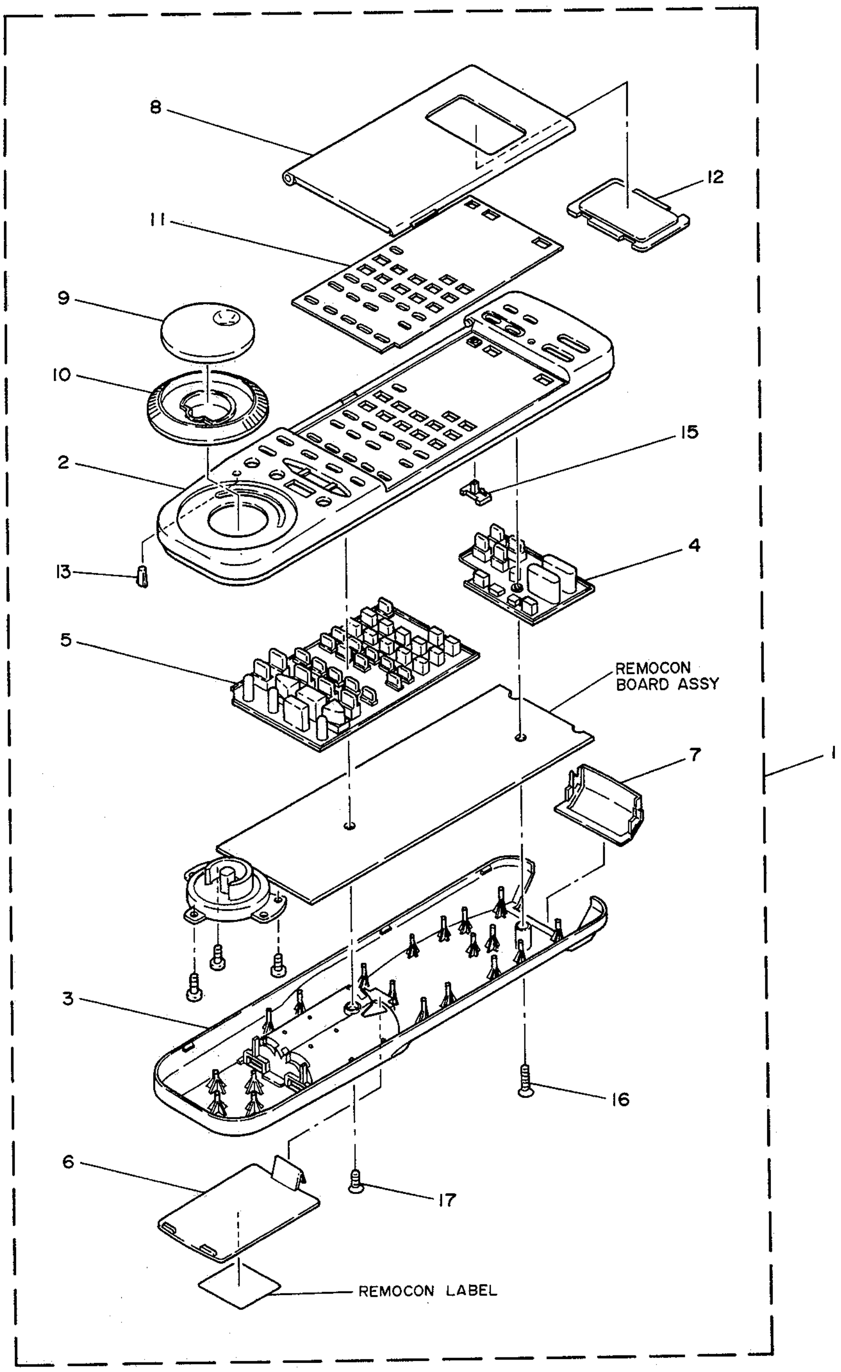
NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

****

MECHANISM ASSEMBLY <M4>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	PQ43497E-11	TENSION ARM ASSY
1A	PQ43500	TENSION SPRING
2	PQ44734A-7	TENSION BAND ASSY
2A	PQ45456	ADJUST PIN
4	PU60616	FULL ERASE HEAD
5	SDSF2614Z	SCREW
6	PQ43505-1-1	ROLLER
7	PQ43506	GUIDE POLE CAP
8	PU61002	AUDIO/CONTROL HEAD
9	PQ43509	HEAD BASE
10	PQ43687A	SPECIAL SCREW,X3
11	PQM30002-192	COMPRESSION SPRING,X3
12	SPSF2608M	SCREW
13	SPSP2606Z	SCREW
14	PU61103-2-7	POLE BASE ASSY (TAKE-UP)
15	PU61151-2-6	POLE BASE ASSY (SUPPLY)
16	PQ45895	STOPPER(T)
17	PQ45894	STOPPER(S)
18	PQ43526-1-3	TAPE GUIDE
19	PQ43670-1-1	GUIDE FLANGE
20	PQ43675	TAPE GUARD
21	PQ43506	GUIDE POLE CAP
⚠ 22	PU61003-1-2	CAPSTAN MOTOR
23	SPSG2608Z	SCREW,X3
24	PU61246	IDLER GEAR UNIT
25	SPST2606Z	SCREW, X2
26	PU61245-1-3	CLUTCH UNIT
27	PQM30017-8	SLIT WASHER
28	PQ43532B	CHANGE LEVER ASSY
29	PU61006	TIMING BELT
30	PU60858-1-4	REEL DISK (TAKE-UP)
	or PQ45617A	REEL DISK (TAKE-UP)
31	PQM30018-54	SPACER,X2
32	PQ43537A	LOADING ARM ASSY (SUPPLY)
33	PQ43542B	LOADING ARM ASSY (TAKE-UP)
34	PQ43676B-5	MODE MOTOR ASSY
	or PQ43676C-7	MODE MOTOR ASSY
35	SPST2606Z	SCREW,X2
36	PQ43548A-3	WORM CLUTCH ASSY
37	PQM30003-23	BELT
38	PQ20822-2-7	CONTROL CAM
39	PQ44581A-6	PLATE ASSY
40	PQM30017-12	SLIT WASHER
41	PQM30017-8	SLIT WASHER
42	PQ43558A-5	PINCH ROLLER ARM ASSY
	or PQ43558B	PINCH ROLLER ARM ASSY
43	PQ32415	PINCH ROLLER PRESS LEVER
44	PQM30001-233	TENSION SPRING
45	PQM30017-12	SLIT WASHER
46	PQ32416-2	PINCH ROLLER CAM
47	PQ43567A-13	GUIDE ARM ASSY
48	PQ43569-1-3	TORSION SPRING
49	PQ43570A-2	HALF LOADING GEAR ASSY
50	PQM30017-12	SLIT WASHER
51	PQ43575A-5	CANCEL LEVER ASSY
51A	PQM30001-273	TENSION SPRING
51B	PQM30001-237	TENSION SPRING
51C	PQM30001-274	TENSION SPRING
52	PQ43578A-2	HOOK ASSY
52A	PQM30001-238	TENSION SPRING
53	PQ43581C	MAIN BRAKE ASSY (SUPPLY)
54	PQ43582B	MAIN BRAKE ASSY (TAKE-UP)
55	PQM30001-251	TENSION SPRING
56	PQ43583A-3	SUB BRAKE ASSY (TAKE-UP)
57	PQM30001-346	TENSION SPRING
60	PU60621-1-2	LED HOLDER, (INCL, LED:D1)
61	PU60624-1-4	REC SAFETY SWITCH,(S2)
	or PU61281	REC SAFETY SWITCH
62	PU61247-1-1	SLIDE ENCORDER,(S3)
63	SDSF2614Z	SCREW
64	PQ32516	PWB HOLDER
65	SDST2616Z	SCREW,X2
66	GPSF2608Z	SCREW,X2
67	PQ43912A-7	PULLEY ARM ASSY
68	PQ33249	PULLEY BASE
69	PQ45121A	SCREW
70	PU60859-1-4	REEL DISK (SUPPLY)
	or PQ45622A	REEL DISK (SUPPLY)
71	PU61008	CASSETTE SW,(S1)
72	SDST2608Z	SCREW
81	PQ44741A-3	LOCK LEVER 2 ASSY
81A	PQM30001-279-52	TENSION SPRING
82	PQ44743A-8	IDLER LEVER ASSEMBLY
82A	PQM30001-344	TENSION SPRING
82B	PQM30001-301	TENSION SPRING
83	PQ44746A-2	OFF LEVER ASSY
83A	PQM30017-5	SLIT WASHER
84	PQ44585A-8	CAPSTAN BRAKE ASSEMBLY
84A	PQM30001-282-52	SPRING
84B	PQM30017-8	SLIT WASHER
85	PQ44843A-3	A.BASE ASSY
85A	PQ44845B	A.BASE SUB ASSY
85B	PQ33511-1-2	CLEANER ARM
85C	PQ44841-1-4	CANCEL LEVER
85D	PQM30001-299	TENSION SPRING
85E	PQM30001-300	TENSION SPRING
85F	PQM30017-5	SLIT WASHER
86	SPST2606Z	SCREW
87	PQ44840B-5	CLEANER BASE ASSY
87A	PQ44844A	CLEANER BASE SUB ASSY
87B	PQ44837	CLEANER
87C	PQ45689	ROLLER
87D	PQM30017-38	SLIT WASHER
91	PQM30017-5	SLIT WASHER
100	PQ20994A-5	MAIN DECK ASSEMBLY
	or PQ21232A-1	MAIN DECK ASSEMBLY
100A	PQ43849	EARTH PLATE
100B	SPST2604Z	SCREW
100C	PQ44739A-1	LOCK LEVER 1 ASSY
100D	PQM30001-278-46	TENSION SPRING
100E	PQM30006-95	PIN (A)

4.5 REMOTE CONTROL UNIT< M5 >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REMOCON BOARD ASSY
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REMOTE CONTROLLER <M5>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	1	PQ11237V	REMOTE CONTROLLER
	2	PQ11221-15	COVER(FRONT)
	3	PQ11093	COVER(REAR)
	4	PQ33870-2	BUTTON(1)
	5	PQ21276-15	BUTTON(3)
	6	PQ33609	CAP(BATTERY)
	7	PQ33610	WINDOW(IR)
	8	PQ33915-5	DOOR
	9	PQ33612-1-1	KNOB(JOG)
	10	PQ33613-1-2	KNOB(SHUTTLE)
	11	PQ33914-15	PLATE
	12	PQ45167	WINDOW(DOOR)
	13	PQ45206	INDICATOR(A)
	15	PQ45219-2	KNOB(SLIDE)
	16	SSSF2008M	SCREW
	17	SSSF2006M	SCREW

SECTION 5
ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

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SWITCHING REGULATOR BOARD ASSY <01><02><18>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PWBA	PB10565N	SW.REG BOARD ASSY
⚠	BKT3	PQ33381-3	BRACKET(POWER)
⚠	HD1	PU57505	FUSE CLIP
⚠	POC1	QMP25E0-250A	POWER CORD
⚠	COV1	PQ33981	COVER(AC)
⚠	COV2	PQ33644-1-2	COVER(AC) (2)
	BKT1	PQ21026-2-3	BRACKET (1)
	BKT2	PQ21027-4-3	BRACKET (2)
	BKT4	PQ33965	BRACKET(SW.REG)
	ETH1	PQ44695	EARTH PLATE
⚠	HD1	QHS3771-108	STRAIN RELIEF
	SCW1	SDST3006Z	SCREW,X8
	SCW2	SDSP3008Z	SCREW
	SLD1	PQ33382	SHIELD COVER(1)
	SLD2	PQ33383	SHIELD COVER(2)

- SWITCHING REGULATOR BOARD ASSEMBLY <01> -

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA1	PB10565N1	SW.REG ASSY	
	IC1	LM358P	IC	
		or XRA10358	IC	
		or BA10358	IC	
		or LM358N	IC	
	Q1	2SC4304-LF619	TRANSISTOR	
		or 2SC3752(LM)-CB7	TRANSISTOR	
	Q2	2SC3616(MLK)	TRANSISTOR	
	Q4	2SB941P	TRANSISTOR	
	Q5	2SA1515(QR)	TRANSISTOR	
	D1	RB-156LFB	DIODE	
	D2	AU01	FR DIODE	
		or 1SR153-400-T2	FR DIODE	
	D3	AU01	FR DIODE	
		or 1SR153-400-T2	FR DIODE	
	D4	AU01Z	FR DIODE	
		or ERA18-02-T2	FR DIODE	
		or 1SR153-200-T2	FR DIODE	
	D5	MTZ27BT-77	ZENER DIODE	
	D7	AK04	DIODE	
		or 11EQS04	SB DIODE	
	D8	AK04	DIODE	
		or 11EQS04	SB DIODE	
	D9	1SS133	DIODE	
		or MA165	DIODE	
	D10	MTZ33AT-77	ZENER DIODE	
	D11	AU01Z	FR DIODE	
		or ERA18-02-T2	FR DIODE	
		or 1SR153-200-T2	FR DIODE	
	D12	11EFS2	FR DIODE	
	D13	1SS133	DIODE	
		or MA165	DIODE	
	D14	FML-12S	FR DIODE	
		or 5DL2CZ41A	FR DIODE	
		or FCF06A20	FR DIODE	
	D15	AU01Z	FR DIODE	
		or ERA18-02-T2	FR DIODE	
		or 1SR153-200-T2	FR DIODE	
	D16	FMB-24	BARRIER DIODE	
		or F5KQ40B	BARRIER DIODE	
		or 5GWJ2CZ42	SB DIODE	
	D18	MTZV6.2A	ZENER DIODE	
		or RD6.2ES-T1B1	ZENER DIODE	
		or UZ6.2BSA	ZENER DIODE	
	D19	RD33ES-T1B4	ZENER DIODE	
	R3	QRD161J-184	RESISTOR	180KΩ,1/6
	R4	QRD161J-184	RESISTOR	180KΩ,1/6
	R5	QRD161J-563	RESISTOR	56KΩ,1/6
	R6	QRG029J-683G	OMF RESISTOR	68KΩ,2
	R7	QRG029J-561A	OMF RESISTOR	560Ω,2
	R8	QRG029J-331G	RESISTOR	330Ω,2
	R9	QRX014J-R33Z	MF RESISTOR	0.33Ω,1
	R10	QRD161J-122	RESISTOR	1.2KΩ,1/6
	R11	QRD161J-471	RESISTOR	470Ω,1/6
⚠	R12	QRZ0077-470X	FUSIBLE RESISTOR	47Ω,1/4
	R14	QRD161J-103	RESISTOR	10KΩ,1/6
⚠	R15	QRZ0077-470X	FUSIBLE RESISTOR	47Ω,1/4
	R16	QRV144F-8451AY	CMF RESISTOR	8.45KΩ,1/4
	R17	QRV144F-9761AY	CMF RESISTOR	9.76KΩ,1/4

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R18	QRD161J-331	RESISTOR	330Ω,1/6W
	R19	QRD161J-222	RESISTOR	2.2KΩ,1/6W
	R21	QRV144F-9761AY	CMF RESISTOR	9.76KΩ,1/4W
	R22	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
	R23	QRV144F-4023A	RESISTOR	402KΩ,1/4W
	R24	QRD161J-471	RESISTOR	470Ω,1/6W
	R26	QRG029J-303A	OMF RESISTOR	30KΩ,2W
⚠	R27	QRG02DJ-222X	OMF RESISTOR	2.2KΩ,2W
	R29	QRD161J-222	RESISTOR	2.2KΩ,1/6W
⚠	C1	QFZ9022-333	MM CAPACITOR	0.033μF
⚠	C2	QFZ9022-333	MM CAPACITOR	0.033μF
⚠	C3	QFZ9022-333	MM CAPACITOR	0.033μF
⚠	C4	QCZ9016-222M	CAPACITOR	0.0022μF
⚠	C5	QCZ9016-222M	CAPACITOR	0.0022μF
⚠	C6	QCZ9016-222M	CAPACITOR	0.0022μF
⚠	C7	QCZ9016-222M	CAPACITOR	0.0022μF
	C8	PECA0738-107	E CAPACITOR	
		or PECA0793-107	E CAPACITOR	
	C9	QCZ0212-472	CAPACITOR	0.0047μF,1KV
		or QCY53AK-472	CAPACITOR	0.0047μF,1KV
	C10	QCZ0213-101Z	CAPACITOR	100pF,1KV
	C11	PECA0780-224Z	M CAPACITOR	
		or QFV11HJ-224	TF CAPACITOR	0.22μF,50V
	C12	QFLA1HJ-682Z	M CAPACITOR	0.0068μF,50V
	C13	QETC1HM-105	E CAPACITOR	1μF,50V
	C14	QEGB1AM-107	E CAPACITOR	100μF,10V
	C15	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C16	QEGC1HM-396	E CAPACITOR	39μF,50V
	C17	QETC1VM-336	E CAPACITOR	33μF,35V
	C18	QCBB1HJ-271	CAPACITOR	270pF,50V
	C19	QEGB1EM-227	E CAPACITOR	220μF,25V
	C20	QETC1EM-227	E CAPACITOR	220μF,25V
	C21	QFN31HJ-103	M CAPACITOR	0.01μF,50V
	C22	QEGB1CM-158	E CAPACITOR	1500μF,16V
	C23	QETB1CM-228	E CAPACITOR	2200μF,16V
	C24	QETC1JM-336	E CAPACITOR	33μF,63V
	C25	QEGB1AM-128	E CAPACITOR	1200μF,10V
	C26	QETB1AM-228	E CAPACITOR	2200μF,10V
	C27	QFN31HJ-102	M CAPACITOR	0.001μF,50V
	C28	QFLA1HJ-223Z	M CAPACITOR	0.022μF,50V
	C29	QFV11HJ-104	MM CAPACITOR	0.1μF,50V
		or QFV41HJ-104	TF CAPACITOR	0.1μF,50V
⚠	C32	QCZ9016-101K	CAPACITOR	100pF
⚠	C33	QCZ9016-101K	CAPACITOR	100pF
⚠	C34	QCZ9016-222M	CAPACITOR	0.0022μF
⚠	C35	QCZ9016-222M	CAPACITOR	0.0022μF
	L1	PU48530-100K	COIL	10μH
	L2	PU60943-330K	COIL	33μH
	L3	PELN0270-330KZ	COIL	33μH
	L4	PU60943-330K	COIL	33μH
⚠	PC1	PC111LS	PH COUPLER	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	T1	PELN0542	SW TRANS
⚠	HS1	PEME0843	HEAT SINK
⚠	HS2	PU61191	HEAT SINK(1)
⚠	HS3	PQ44774	HEAT SINK
	J1	PEMC0742-010	CONNECTOR(BOARD TO BOARD)
	J2	PEMC0742-006	CONNECTOR(BOARD TO BOARD)
⚠	LF1	PU60347	LINE FILTER
⚠		or PU61108	LINE FILTER
⚠	LF2	PELN0255	LINE FILTER
⚠		or PU59707	LINE FILTER
	SCW1	SDSG3008Z	SCREW
	SCW2	DPSP3008Z	SCREW,X2
	SCW3	SDSG3008Z	SCREW
	CN1	PU60417-105	CONNECTOR
⚠	CP1	ICP-N10	*CIRCUIT PROTECTOR*
⚠	CP6	ICP-F25	*CIRCUIT PROTECTOR*

– REGULATOR (1) BOARD ASSEMBLY <02> –

PWBA2	PB10565N2	REG(1) ASSY	
IC2	LM358P	IC	
	or LM358N	IC	
	or XRA10358	IC	
	or BA10358	IC	
Q31	2SD2159(UV)	TRANSISTOR	
Q32	2SB1068(KU)	TRANSISTOR	
Q34	2SD1855(EF)	TRANSISTOR	
Q36	2SD1796	TRANSISTOR	
	or 2SD1856	TRANSISTOR	
D35	UZ5.1BSC	ZENER DIODE	
	or MTZV5.1C	ZENER DIODE	
	or RD5.1ES-T1B3	ZENER DIODE	
R31	QRD161J-102	RESISTOR	1KΩ,1/6W
R32	QRD161J-471	RESISTOR	470Ω,1/6W
R33	QRD161J-102	RESISTOR	1KΩ,1/6W
R35	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R36	QVZ3521-222Z	V RESISTOR,SW 5V	2.2KΩ
	or QVZ3521-222	V RESISTOR	2.2KΩ
R37	QRD161J-123	RESISTOR	12KΩ,1/6W
R38	QRD161J-102	RESISTOR	1KΩ,1/6W
R39	QRD161J-112	RESISTOR	1.1KΩ,1/6W
R40	QRD161J-103	RESISTOR	10KΩ,1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R41	QRD161J-102	RESISTOR	1KΩ,1/6W
	R45	QRD161J-752	RESISTOR	7.5KΩ,1/6W
	R46	QRD161J-103	RESISTOR	10KΩ,1/6W
	R47	QRD161J-682	RESISTOR	6.8KΩ,1/6W
	C41	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C42	QEK60JM-107	E CAPACITOR	100μF,6.3V
	C43	QEK61CM-107	E CAPACITOR	100μF,16V
	C44	QEK61CM-107	E CAPACITOR	100μF,16V
	C45	QFN31HJ-103	M CAPACITOR	0.01μF,50V
	C46	QFN31HJ-102	M CAPACITOR	0.001μF,50V
	C47	QEK61CM-107	E CAPACITOR	100μF,16V
⚠	HS1	PQ44774-2	HEAT SINK	
	J3	PEMC0742-008	CONNECTOR(BOARD TO BOARD)	
	SCW1	SDSG3008Z	SCREW	
	CN2	PU58844-105	CONNECTOR	
	CN3	PU60417-109	CONNECTOR	
	CN5	PU60417-105	CONNECTOR	
⚠	CP4	ICP-N10	CIRCUIT PROTECTOR	
⚠	CP5	ICP-N25	CIRCUIT PROTECTOR	

- REGULATOR (2) BOARD ASSEMBLY <18> -

	PWBA3	PB10565N3	REG(2) ASSY	
	Q35	2SB1068(KU)	TRANSISTOR	
	R43	QRD161J-272	RESISTOR	2.7KΩ,1/6W
	R44	QRD161J-103	RESISTOR	10KΩ,1/6W
	C48	QETC1CM-107	E CAPACITOR	100μF,16V
	C49	QETC1AM-107	E CAPACITOR	100μF,10V
	CN4	PU58844-104	CONNECTOR	
	CN6	PU60417-103	CONNECTOR	
	CN9	PU58844-102	CONNECTOR	
⚠	CP7	ICP-N15	CIRCUIT PROTECTOR	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

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A/S/M BOARD ASSEMBLY <04>

	PWBA	PB10703F1-01	A/S/M BOARD ASSY
	BKT1	PQ44693-1-1	BRACKET(1),X2
	BKT2	PQ44694-1-2	BRACKET(2)
	CL1	PEME0802	CLAMP,X4
	JA1	PEMC0761	PIN JACK(SW)
	JA2	PEMC0760	PIN JACK
	JA3	PU61012	MINI JACK
	SCW1	SDSF2608Z	SCREW
	SCW2	SDSG2606Z	SCREW,X3
⚠	TB1	PQ21440	TERMINAL BOARD
	TP	PU55774	TEST PIN,X2

- AUDIO SECTION -

	IC1	MC14052BCP	IC
	IC2	XRA15218	IC
		or BA15218	IC
	IC3	XRA15218	IC
		or BA15218	IC
	IC5	XRA15218	IC
		or BA15218	IC
	Q1	2SC3311A(RS)	TRANSISTOR
	Q2	DTC114ES	TRANSISTOR
	Q4	2SC1740S(RS)	TRANSISTOR
		or 2SC3199(G)	TRANSISTOR
	D1	1SS133	DIODE
		or MA165	DIODE
	D2	1SS133	DIODE
		or MA165	DIODE
	D3	1SS133	DIODE
		or MA165	DIODE
	D4	1SS133	DIODE
		or MA165	DIODE
	D5	1SS133	DIODE
		or MA165	DIODE
	D6	1SS133	DIODE
		or MA165	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D7	1SS133	DIODE	
	or MA165	DIODE	
D8	1SS133	DIODE	
	or MA165	DIODE	
D9	1SS133	DIODE	
	or MA165	DIODE	
D11	1SS133	DIODE	
	or MA165	DIODE	
R1	QRD161J-154	RESISTOR	150KΩ,1/6W
R2	QRD161J-154	RESISTOR	150KΩ,1/6W
R3	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R4	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R5	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R6	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R7	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R8	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R9	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R10	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R11	QRD161J-273	RESISTOR	27KΩ,1/6W
R12	QRD161J-273	RESISTOR	27KΩ,1/6W
R13	QRD161J-333	RESISTOR	33KΩ,1/6W
R14	QRD161J-822	RESISTOR	8.2KΩ,1/6W
R15	QRD161J-473	RESISTOR	47KΩ,1/6W
R16	QRD161J-473	RESISTOR	47KΩ,1/6W
R17	QRD161J-473	RESISTOR	47KΩ,1/6W
R18	QRD161J-473	RESISTOR	47KΩ,1/6W
R20	QRD161J-154	RESISTOR	150KΩ,1/6W
R21	QRD161J-184	RESISTOR	180KΩ,1/6W
R22	QRD161J-154	RESISTOR	150KΩ,1/6W
R23	QRD161J-184	RESISTOR	180KΩ,1/6W
R24	QRD161J-103	RESISTOR	10KΩ,1/6W
R25	QRD161J-103	RESISTOR	10KΩ,1/6W
R26	QRD161J-362	RESISTOR	3.6KΩ,1/6W
R27	QRD161J-362	RESISTOR	3.6KΩ,1/6W
R28	QRD161J-683	RESISTOR	68KΩ,1/6W
R29	QRD161J-823	RESISTOR	82KΩ,1/6W
R30	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R31	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R32	QRD161J-223	RESISTOR	22KΩ,1/6W
R33	QRD161J-273	RESISTOR	27KΩ,1/6W
R34	QRD161J-823	RESISTOR	82KΩ,1/6W
R35	QRD161J-221	RESISTOR	220Ω,1/6W
R36	QRD161J-202	RESISTOR	2KΩ,1/6W
R37	QRD161J-473	RESISTOR	47KΩ,1/6W
R38	QRD161J-102	RESISTOR	1KΩ,1/6W
R43	QRD161J-473	RESISTOR	47KΩ,1/6W
R44	QRD161J-563	RESISTOR	56KΩ,1/6W
R45	QRD161J-473	RESISTOR	47KΩ,1/6W
R46	QRD161J-563	RESISTOR	56KΩ,1/6W
R47	QRD161J-102	RESISTOR	1KΩ,1/6W
R48	QRD161J-680	RESISTOR	68Ω,1/6W
R49	QRD161J-680	RESISTOR	68Ω,1/6W
R50	QRD161J-103	RESISTOR	10KΩ,1/6W
R51	QRD161J-103	RESISTOR	10KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R52	QRD161J-221	RESISTOR	220Ω,1/6W
R53	QRD161J-221	RESISTOR	220Ω,1/6W
R54	QRD161J-103	RESISTOR	10KΩ,1/6W
R55	QRD161J-103	RESISTOR	10KΩ,1/6W
C3	QETC1CM-476	E CAPACITOR	47μF,16V
C4	QETC1CM-476	E CAPACITOR	47μF,16V
C5	QETC1CM-106	E CAPACITOR	10μF,16V
C6	QETC1CM-106	E CAPACITOR	10μF,16V
C7	QETC1CM-476	E CAPACITOR	47μF,16V
C8	QETC1CM-226	E CAPACITOR	22μF,16V
C9	QETC1CM-226	E CAPACITOR	22μF,16V
C10	QETC1CM-106	E CAPACITOR	10μF,16V
C11	QETC1CM-106	E CAPACITOR	10μF,16V
C12	QETC1EM-475	E CAPACITOR	4.7μF,25V
C13	QETC1HM-105	E CAPACITOR	1μF,50V
C14	QETC1HM-105	E CAPACITOR	1μF,50V
C15	QCBB1HJ-151	CAPACITOR	150pF,50V
C16	QETC1EM-475	E CAPACITOR	4.7μF,25V
C17	QETC1HM-105	E CAPACITOR	1μF,50V
C18	QETC1CM-476	E CAPACITOR	47μF,16V
C21	QETC1CM-476	E CAPACITOR	47μF,16V
C22	QEK61CM-476	E CAPACITOR	47μF,16V
C23	QETC1CM-476	E CAPACITOR	47μF,16V
C24	QETC1CM-476	E CAPACITOR	47μF,16V
C25	QETC1CM-106	E CAPACITOR	10μF,16V
C26	QETC1CM-106	E CAPACITOR	10μF,16V
C27	QETC1CM-476	E CAPACITOR	47μF,16V
C28	QETC1CM-476	E CAPACITOR	47μF,16V
L3	PU59152-2R2J	COIL	2.2μH
CN1	PU58844-4	CONNECTOR	
CN2	PU58844-6	CONNECTOR	
CN3	PU58844-5	CONNECTOR	
CN4	PEMC0714-015	CONNECTOR	
CN5	PU58844-3	CONNECTOR	
CN9	PEMC0714-009	CONNECTOR	
CN10	PU58844-3	CONNECTOR	
CN11	PU58844-2	CONNECTOR	

– WIDE ASPECT SECTION –

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
Q301	2SB810H,J	TRANSISTOR
Q302	2SC1740S(RS)	TRANSISTOR
	or 2SC3199(G)	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q303	2SB810H,J	TRANSISTOR
Q304	DTA144ES	TRANSISTOR
Q305	DTA144ES	TRANSISTOR
Q306	DTC144ES	TRANSISTOR
D301	1SS133	DIODE
	or MA165	DIODE

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
D302	1SS133	DIODE	
	or MA165	DIODE	
D303	1SS133	DIODE	
	or MA165	DIODE	
D304	1SS133	DIODE	
	or MA165	DIODE	
D305	1SS133	DIODE	
	or MA165	DIODE	
D306	1SS133	DIODE	
	or MA165	DIODE	
D307	1SS133	DIODE	
	or MA165	DIODE	
R301	QRD121J-331S	RESISTOR	330Ω,1/2W
R302	QRD161J-393	RESISTOR	39KΩ,1/6W
R303	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R304	QRD161J-512	RESISTOR	5.1KΩ,1/6W
R305	QRD161J-752	RESISTOR	7.5KΩ,1/6W
R306	QRD161J-393	RESISTOR	39KΩ,1/6W
R307	QRD161J-223	RESISTOR	22KΩ,1/6W
R308	QRD161J-102	RESISTOR	1KΩ,1/6W
R309	QRD161J-102	RESISTOR	1KΩ,1/6W
R310	QRD161J-473	RESISTOR	47KΩ,1/6W
CN301	PU60417-3	CONNECTOR	

– SERVO SECTION –

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
IC401	HD49780NT	IC	
IC451	BA7039	IC	
	or XRA7039	IC	
D402	1SS133	DIODE	
	or MA165	DIODE	
D403	1SS133	DIODE	
	or MA165	DIODE	
R401	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R402	QRD161J-102	RESISTOR	1KΩ,1/6W
R403	QRD161J-105	RESISTOR	1MΩ,1/6W
R404	QRD161J-103	RESISTOR	10KΩ,1/6W
R405	QRD161J-474	RESISTOR	470KΩ,1/6W
R406	QRD161J-102	RESISTOR	1KΩ,1/6W
R407	QRD161J-102	RESISTOR	1KΩ,1/6W
R408	QRD161J-102	RESISTOR	1KΩ,1/6W
R409	QRD161J-102	RESISTOR	1KΩ,1/6W
R410	QRD161J-223	RESISTOR	22KΩ,1/6W
R411	QRD161J-225	RESISTOR	2.2MΩ,1/6W
R412	QRD161J-473	RESISTOR	47KΩ,1/6W
R413	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R414	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R415	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R416	QRD161J-223	RESISTOR	22KΩ,1/6W
R417	QRD161J-223	RESISTOR	22KΩ,1/6W
R418	QRD161J-105	RESISTOR	1MΩ,1/6W
R419	QRD161J-273	RESISTOR	27KΩ,1/6W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R421	QRD161J-394	RESISTOR	390KΩ,1/6W
R423	QRD161J-105	RESISTOR	1MΩ,1/6W
R424	QRD161J-273	RESISTOR	27KΩ,1/6W
R428	QRD161J-564	RESISTOR	560KΩ,1/6W
R429	QRD161J-183	RESISTOR	18KΩ,1/6W
R430	QRD161J-335	RESISTOR	3.3MΩ,1/6W
R431	QRD161J-334	RESISTOR	330KΩ,1/6W
R432	QRD161J-822	RESISTOR	8.2KΩ,1/6W
R436	QRD161J-102	RESISTOR	1KΩ,1/6W
R438	QRD161J-104	RESISTOR	100KΩ,1/6W
R451	QRD161J-102	RESISTOR	1KΩ,1/6W
R452	QRD161J-102	RESISTOR	1KΩ,1/6W
R453	QRD161J-102	RESISTOR	1KΩ,1/6W
R454	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R455	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R456	QRD161J-274	RESISTOR	270KΩ,1/6W
C401	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C402	QEK61AM-226	E CAPACITOR	22μF,10V
C403	QEK61AM-226	E CAPACITOR	22μF,10V
C404	QCBB1HJ-181	CAPACITOR	180pF,50V
C405	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C406	QFV71HJ-223	TF CAPACITOR	0.022μF,50V
	or QFV11HJ-223	MMT CAP	0.022μF,50V
C407	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C408	QFV71HJ-563	TF CAPACITOR	0.056μF,50V
	or QFV11HJ-563	MMT CAP	0.056μF,50V
C409	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C410	QCVB1CM-103	CAPACITOR	0.01μF,16V
C411	QCVB1CM-103	CAPACITOR	0.01μF,16V
C412	QEK61CM-106	E CAPACITOR	10μF,16V
C413	QFV71HJ-224	TF CAPACITOR	0.22μF,50V
	or QFV11HJ-224	TF CAPACITOR	0.22μF,50V
C414	QCC31CK-223	CAPACITOR	0.022μF,16V
C415	QEK61EM-475	E CAPACITOR	4.7μF,25V
C416	QEK61EM-475	E CAPACITOR	4.7μF,25V
C417	QEK61CM-106	E CAPACITOR	10μF,16V
C418	QEK61CM-106	E CAPACITOR	10μF,16V
C419	QFV71HJ-223	TF CAPACITOR	0.022μF,50V
	or QFV11HJ-223	MMT CAP	0.022μF,50V
C420	QFV71HJ-184	TF CAPACITOR	0.18μF,50V
	or QFV11HJ-184	MMT CAP	0.18μF,50V
C421	QCBB1HJ-471	CAPACITOR	470pF,50V
C451	QCVB1CM-103	CAPACITOR	0.01μF,16
C452	QCC31CK-104	CAPACITOR	0.1μF,16
C453	QCVB1CM-103	CAPACITOR	0.01μF,16
C454	QCVB1CM-103	CAPACITOR	0.01μF,16
C455	QCVB1CM-103	CAPACITOR	0.01μF,16
C456	QCVB1CM-103	CAPACITOR	0.01μF,16
C458	QEK61CM-106	E CAPACITOR	10μF,16
C459	QFV71HJ-104	TF CAPACITOR	0.1μF,50
	or QFV11HJ-104	MM CAPACITOR	0.1μF,50
L451	PU59152-270J	COIL	27μ

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
TP401	PU55774	TEST PIN	
TP411	PU55774	TEST PIN	
CN401	PU58844-3	CONNECTOR	
CN402	PU59555-4	CONNECTOR	
CN403	PU58844-8	CONNECTOR	
CN404	PEMC0714-015	CONNECTOR	
CN406	PU58844-2R	CONNECTOR	
⚠ CP401	ICP-N15	CIRCUIT PROTECTOR	

– MECHACON SECTION –

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
IC601	M37525M4-114SP	IC	
IC602	CAT35C104P-037	IC	
IC603	M50255P	IC	
Q601	2SB1256	TRANSISTOR	
Q602	2SC3199(GB)-TJK	TRANSISTOR	
Q604	DTC124ES	TRANSISTOR	
Q605	DTC144ES	TRANSISTOR	
D601	1SS133	DIODE	
	or MA165	DIODE	
D602	11ES2	DIODE	
	or 1SR139-200	DIODE	
	or ERA15-02	DIODE	
	or S5688G	DIODE	
D603	1SS133	DIODE	
	or MA165	DIODE	
D604	MTZ7.5B	ZENER DIODE	
	or HZS7.5EB2	ZENER DIODE	
	or UZ7.5BSB	ZENER DIODE	
D605	1SS133	DIODE	
	or MA165	DIODE	
D606	1SS133	DIODE	
	or MA165	DIODE	
D607	1SS133	DIODE	
	or MA165	DIODE	
D608	11ES2	DIODE	
	or ERA15-02	DIODE	
	or S5688G	DIODE	
	or 1SR139-200	DIODE	
D609	1SS133	DIODE	
	or MA165	DIODE	
D610	MTZ7.5B	ZENER DIODE	
	or HZS7.5EB2	ZENER DIODE	
R601	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R602	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R603	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R604	QRD161J-102	RESISTOR	1KΩ,1/6W
R605	QRD161J-102	RESISTOR	1KΩ,1/6W
R606	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R607	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R608	QRD161J-472	RESISTOR	4.7KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R609	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R612	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R613	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R614	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R615	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R616	QRD161J-103	RESISTOR	10KΩ,1/6W
R617	QRD161J-102	RESISTOR	1KΩ,1/6W
R618	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R619	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R620	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R621	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R622	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R623	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R624	QRD161J-103	RESISTOR	10KΩ,1/6W
R625	QRD161J-105	RESISTOR	1MΩ,1/6W
R626	QRD161J-681	RESISTOR	680Ω,1/6W
R627	QRD161J-102	RESISTOR	1KΩ,1/6W
R628	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R629	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R630	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R631	QRD161J-102	RESISTOR	1KΩ,1/6W
R632	QRD161J-102	RESISTOR	1KΩ,1/6W
R633	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R634	QRD161J-103	RESISTOR	10KΩ,1/6W
R635	QRD161J-563	RESISTOR	56KΩ,1/6W
R636	QRD161J-154	RESISTOR	150KΩ,1/6W
R637	QRD161J-333	RESISTOR	33KΩ,1/6W
R638	QRD161J-303	RESISTOR	30KΩ,1/6W
R639	QRD161J-224	RESISTOR	220KΩ,1/6W
R640	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R641	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R642	QRD161J-103	RESISTOR	10KΩ,1/6W
R643	QRD161J-333	RESISTOR	33KΩ,1/6W
R645	QRD161J-471	RESISTOR	470Ω,1/6W
R646	QRD161J-103	RESISTOR	10KΩ,1/6W
R647	QRD161J-333	RESISTOR	33KΩ,1/6W
R648	QRD161J-473	RESISTOR	47KΩ,1/6W
R649	QRD161J-102	RESISTOR	1KΩ,1/6W
R650	QRD161J-102	RESISTOR	1KΩ,1/6W
R651	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R652	QRD161J-391	RESISTOR	390Ω,1/6W
RA601	QRB045J-103M	RESISTOR ARRAY	10KΩ,4W
	or QRB045J-103F	RESISTOR ARRAY	10KΩ,4W
C601	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C602	QEK61EM-335	E CAPACITOR	3.3μF,25V
C603	QCC11EJ-104	CAPACITOR	0.1μF,25V
C604	QEK61HM-105	E CAPACITOR	1μF,50V
C605	QETC0JM-107	E CAPACITOR	100μF,6.3V
C606	QCBB1HJ-121	CAPACITOR	120pF,50V
C608	QCC11EJ-104	CAPACITOR	0.1μF,25V
C609	QCBB1HJ-101	CAPACITOR	100pF,50V
C610	QCSB1HJ-220	CAPACITOR	22pF,50V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C611	QCC11EJ-104	CAPACITOR	0.1µF,25V
C612	QCBB1HJ-101	CAPACITOR	100pF,50V
L601	PU59152-2R2J	COIL	2.2µH
△ CF601	PEVB0340	RESONATOR	
CN601	PEMC0722-018	WIRE TRAP	
	or PEMC0753-018	WIRE TRAP	
CN602	PU59555-4	CONNECTOR	
CN603	PU58844-2	CONNECTOR	
CN604	PU60417-8	CONNECTOR	
CN605	PU60417-9	CONNECTOR	
CN607	PU60417-4	CONNECTOR	
CN609	PU60417-7	CONNECTOR	
CN610	PEMC0714-011	CONNECTOR	
CN611	PU58844-2	CONNECTOR	
CN612	PU60417-4	CONNECTOR	
CN613	PU58844-4	CONNECTOR	
CN614	PU58844-2	CONNECTOR	
△ CP601	ICP-N25	CIRCUIT PROTECTOR	
△ CP602	ICP-N38	CIRCUIT PROTECTOR	

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VIDEO UNIT BOARD ASSEMBLY <05>

PWBA	PB10580C-01	VIDEO UNIT BOARD ASSY	
SLD1	PU61177-1-2	SHIELD CASE	
SLD2	PU61178	SHIELD PLATE	

– Y SECTION –

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
IC401	PB20432D-01	Y.MODULE	
IC402	CXL5003M	IC	
IC404	MC74HC4538N	IC	
IC405	CD4066BE	IC	
	or BU4066B	IC	
IC406	TC4S81F	IC	
IC407	TC4S01F	IC	
IC408	TC4S30F	IC	
IC409	TC4S71F	IC	
Q401	2SC4081(QRS)	TRANSISTOR	
Q402	2SC4081(QRS)	TRANSISTOR	
Q403	2SC4081(QRS)	TRANSISTOR	
Q404	2SC4081(QRS)	TRANSISTOR	
Q407	2SA1576(QRS)	TRANSISTOR	
Q408	DTC144WU	TRANSISTOR	
Q409	2SA1576(QRS)	TRANSISTOR	
Q411	DTA144EU	TRANSISTOR	
Q413	DTC124EU	TRANSISTOR	
Q414	DTC144WU	TRANSISTOR	
Q415	DTC144WU	TRANSISTOR	
D401	DAP202U	DIODE	
D404	DAN202U	DIODE	
D405	DAN202U	DIODE	
D406	DAN202U	DIODE	
D407	DAN202U	DIODE	
D408	DAP202U	DIODE	
D411	1SS133	DIODE	
	or MA165	DIODE	
R401	QRS188J-122YN	RESISTOR	1.2KΩ,1/8W
R402	QRS188J-272YN	RESISTOR	2.7KΩ,1/8W
R403	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R404	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R405	QRS188J-182YN	RESISTOR	1.8KΩ,1/8W
R406	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R407	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R408	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R409	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
R410	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R412	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R413	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R415	QRSA08J-242YN	RESISTOR	2.4KΩ,1/10W
R416	QVZ3518-151	V RESISTOR,SUB EMPHA INPUT LEV	150
R417	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R419	QRD161J-223	RESISTOR	22KΩ,1/6W
R420	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R422	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R424	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R425	QRSA08F-431YN	RESISTOR	430Ω,1/10W
R427	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R428	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R429	QRSA08J-274YN	RESISTOR	270KΩ,1/10W
R430	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R431	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
R433	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R434	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R435	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R436	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R437	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R438	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R439	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R440	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R441	QRSA08J-102YN	RESISTOR	1KΩ,1/10
R443	QRSA08J-103YN	RESISTOR	10KΩ,1/10
R444	QVZ3518-102	V RESISTOR,YNR BALANCE	1K
R445	QRSA08J-242YN	RESISTOR	2.4KΩ,1/10

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R446	QRSA08J-242YN	RESISTOR	2.4KΩ,1/10W
R447	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R448	QRS188J-222YN	RESISTOR	2.2KΩ,1/8W
R449	QRSA08J-512YN	RESISTOR	5.1KΩ,1/10W
R450	QRS188J-101YN	RESISTOR	100Ω,1/8W
R451	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R453	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
R454	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R455	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R456	QRSA08J-241YN	RESISTOR	240Ω,1/10W
C401	QETC0JM-476	E CAPACITOR	47μF,6.3V
C402	QCSA1HJ-7R0	CAPACITOR	7pF,50V
C403	QCYA1HK-103	CAPACITOR	0.01μF,50V
C404	QCYA1EK-104	CAPACITOR	0.1μF,25V
C405	QCYA1HK-103	CAPACITOR	0.01μF,50V
C406	QETC1HM-474	E CAPACITOR	0.47μF,50V
C407	QCYA1HK-103	CAPACITOR	0.01μF,50V
C408	QETC0JM-476	E CAPACITOR	47μF,6.3V
C409	QCYA1HK-103	CAPACITOR	0.01μF,50V
C410	QETC1CM-476	E CAPACITOR	47μF,16V
C411	QCYA1HK-103	CAPACITOR	0.01μF,50V
C412	QCYA1HK-103	CAPACITOR	0.01μF,50V
C413	QETC1CM-476	E CAPACITOR	47μF,16V
C414	QCYA1HK-223	CAPACITOR	0.022μF,50V
C415	QETC0JM-107	E CAPACITOR	100μF,6.3V
C416	QETC1CM-226	E CAPACITOR	22μF,16V
C417	QETC0JM-107	E CAPACITOR	100μF,6.3V
C418	QETC1HM-225	E CAPACITOR	2.2μF,50V
C419	QETC1HM-225	E CAPACITOR	2.2μF,50V
C420	QETC1EM-475	E CAPACITOR	4.7μF,25V
C421	QETC0JM-476	E CAPACITOR	47μF,6.3V
C422	QCYA1HK-103	CAPACITOR	0.01μF,50V
C423	QETC0JM-107	E CAPACITOR	100μF,6.3V
C424	QCSA1HJ-100	CAPACITOR	10pF,50V
C425	QCTA1CH-181	CAPACITOR	180pF,16V
C426	QCTA1CH-471	CAPACITOR	470pF,16V
C429	QCSA1HJ-300	CAPACITOR	30pF,50V
C430	QCSA1HJ-620	CAPACITOR	62pF,50V
C431	QCSA1HJ-151	CAPACITOR	150pF,50V
C433	QCYA1HK-473	CAPACITOR	0.047μF,50V
C435	QETC0JM-107	E CAPACITOR	100μF,6.3V
C436	QETC1EM-475	E CAPACITOR	4.7μF,25V
C437	QETC1CM-106	E CAPACITOR	10μF,16V
C438	QETC1EM-475	E CAPACITOR	4.7μF,25V
C439	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C440	QCYA1HK-103	CAPACITOR	0.01μF,50V
C441	QCSA1HJ-271	CAPACITOR	270pF,50V
C442	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C443	QETC1CM-106	E CAPACITOR	10μF,16V
C445	QCYA1HK-103	CAPACITOR	0.01μF,50V
C450	QCSA1HJ-101	CAPACITOR	100pF,50V
C451	QCSA1HJ-221	CAPACITOR	220pF,50V
C452	QCYA1EK-104	CAPACITOR	0.1μF,25V
C453	QCYA1EK-104	CAPACITOR	0.1μF,25V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C454	QCYA1EK-104	CAPACITOR	0.1μF,25V
C456	QCYA1EK-104	CAPACITOR	0.1μF,25V
C457	QCYA1EK-104	CAPACITOR	0.1μF,25V
C458	QCYA1EK-104	CAPACITOR	0.1μF,25V
C459	QETC0JM-227	E CAPACITOR	220μF,6.3V
C460	QCTA1CH-680	CAPACITOR	68pF,16V
C461	QCSA1HJ-221	CAPACITOR	220pF,50V
L401	PU48530-101K	COIL	100μH
L402	PU48530-101K	COIL	100μH
L403	PU59153-101K	COIL	100μH
L404	PU59153-101K	COIL	100μH
L405	PU59988-181J	COIL	180μH
L406	PU59153-101K	COIL	100μH
L407	PU59153-101K	COIL	100μH
L408	PU59988-120J	COIL	12μH
L410	PU59988-151JY	COIL	150μH
L411	PU48530-471K	COIL	470μH
LPF401	PELN0566	LOW PASS FILTER	
LPF402	PU60737	LOW PASS FILTER	
LPF403	PU60812	LOW PASS FILTER	
CN401	PU60910-12	CONNECTOR	
	or PU60727-12	CONNECTOR	
CN402	PU60910-9	WIRE TRAP	
	or PU60727-9	CONNECTOR	

– COLOR SECTION –

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
IC501	PB20463A-01	COLOR MODULE BOARD ASSY
IC503	TC4S01F	IC
Q501	2SA1576(QRS)	TRANSISTOR
Q502	DTC144WU	TRANSISTOR
Q504	2SC4081(QRS)	TRANSISTOR
Q505	DTC144WU	TRANSISTOR
Q506	DTC144WU	TRANSISTOR
Q509	DTA124EU	TRANSISTOR
Q510	DTC144WU	TRANSISTOR
Q513	DTC114EU	TRANSISTOR
Q514	DTC144WU	TRANSISTOR
Q515	DTC144WU	TRANSISTOR
Q516	2SC4081(QRS)	TRANSISTOR
Q517	2SC4081(QRS)	TRANSISTOR
Q518	DTA114EU	TRANSISTOR
Q519	2SC4081(QRS)	TRANSISTOR
Q520	2SC4081(QRS)	TRANSISTOR
Q521	2SC4081(QRS)	TRANSISTOR
Q524	2SA1576(QRS)	TRANSISTOR
Q525	2SA1576(QRS)	TRANSISTOR
Q528	DTC144WU	TRANSISTOR
Q529	DTC144WU	TRANSISTOR
Q530	DTC144WU	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D505	DAN202U	DIODE	
D507	DAN202U	DIODE	
D511	DAN202U	DIODE	
R503	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R504	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R505	QRD161J-471	RESISTOR	470Ω,1/6W
R506	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R507	QRSA08J-911YN	RESISTOR	910Ω,1/10W
R508	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R509	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R511	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R512	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R513	QRSA08J-124YN	RESISTOR	120KΩ,1/10W
R514	QRSA08J-125YN	RESISTOR	1.2MΩ,1/10W
R515	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R516	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R518	QRD161J-103	RESISTOR	10KΩ,1/6W
R519	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R520	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R522	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R523	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R524	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R526	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R527	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R528	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R529	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R530	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R531	QRS188J-104YN	RESISTOR	100KΩ,1/8W
R532	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R533	QRSA08J-225YN	RESISTOR	2.2MΩ,1/10W
R535	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R536	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R537	QRS188J-182YN	RESISTOR	1.8KΩ,1/8W
R538	QRS188J-102YN	RESISTOR	1KΩ,1/8W
R540	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R541	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R542	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R543	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R544	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R545	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R546	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R547	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R548	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R551	QRS188J-102YN	RESISTOR	1KΩ,1/8W
R552	QRS188J-102YN	RESISTOR	1KΩ,1/8W
R553	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R554	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R555	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R556	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R557	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R563	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R564	QRD161J-103	RESISTOR	10KΩ,1/6W
R565	QRSA08J-103YN	RESISTOR	10KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C501	QCSA1HJ-100	CAPACITOR	10pF,50V
C502	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C503	QCYA1HK-103	CAPACITOR	0.01μF,50V
C504	QCSA1HJ-220	CAPACITOR	22pF,50V
C506	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C507	QCSA1HJ-331	CAPACITOR	330pF,50V
C508	QCSA1HJ-121	CAPACITOR	120pF,50V
C509	QETC0JM-107	E CAPACITOR	100μF,6.3V
C510	QCSA1HJ-220	CAPACITOR	22pF,50V
C511	QETC1HM-105	E CAPACITOR	1μF,50V
C512	QETC1EM-335	E CAPACITOR	3.3μF,25V
C513	QETC1HM-105	E CAPACITOR	1μF,50V
C514	QCYA1HK-103	CAPACITOR	0.01μF,50V
C517	QFN31HJ-823	M CAPACITOR	0.082μF,50V
C518	QCYA1HJ-822	CAPACITOR	0.0082μF,50V
C519	QETC1EM-475	E CAPACITOR	4.7μF,25V
C520	QCYA1HJ-822	CAPACITOR	0.0082μF,50V
C521	QETC1HM-335	E CAPACITOR	3.3μF,50V
C522	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C523	QETC1HM-474	E CAPACITOR	0.47μF,50V
C524	QETC1HM-224	E CAPACITOR	0.22μF,50V
C525	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C526	QETC0JM-107	E CAPACITOR	100μF,6.3V
C527	QETC1HM-105	E CAPACITOR	1μF,50V
C528	QETC1HM-104	E CAPACITOR	0.1μF,50V
C529	QETC1HM-105	E CAPACITOR	1μF,50V
C530	QETC1HM-105	E CAPACITOR	1μF,50V
C531	QCYA1HK-223	CAPACITOR	0.022μF,50
C534	QETC0JM-107	E CAPACITOR	100μF,6.3
C535	QCFA1HZ-103	CAPACITOR	0.01μF,50
C536	QCY81HK-103	CAPACITOR	0.01μF,50
C537	QCSA1HJ-470	CAPACITOR	47pF,50
C538	QCFA1HZ-103	CAPACITOR	0.01μF,50
C539	QETC0JM-476	E CAPACITOR	47μF,6.3
C540	QCYA1HK-103	CAPACITOR	0.01μF,50
C541	QCSA1HJ-330	CAPACITOR	33pF,50
C542	QCSA1HJ-390	CAPACITOR	39pF,50
C543	QFN31HJ-473	M CAPACITOR	0.047μF,50
C544	QCSA1HJ-560	CAPACITOR	56pF,50
C546	QCYA1HK-103	CAPACITOR	0.01μF,50
C550	QCYA1HK-682	CAPACITOR	0.0068μF,50
C551	QCYA1HK-222	CAPACITOR	0.0022μF,50
C552	QCSA1HJ-820	CAPACITOR	82pF,50
C553	QCFA1HZ-103	CAPACITOR	0.01μF,50
C554	QCYA1HK-103	CAPACITOR	0.01μF,50
C561	QCYA1EK-104	CAPACITOR	0.1μF,25
C563	QETC1HM-105	E CAPACITOR	1μF,50
C564	QETC1HM-105	E CAPACITOR	1μF,50
L501	PU59153-101K	COIL	100μ
L502	PU59988-680J	COIL	68μ
L503	PU59988-150J	COIL	15μ
L504	PU59988-820J	COIL	82μ
L505	PU59988-1R0JY	COIL	1μ
L506	PU59988-100J	COIL	10μ

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L507	PU59988-330J	COIL	33μH
L509	PU59153-101K	COIL	100μH
L511	PU59153-101K	COIL	100μH
L513	PU48530-101K	COIL	100μH
L514	PU59988-390J	COIL	39μH
L515	PU48530-222J	COIL	2.2mH
L516	PU59988-221JW	COIL	220μH
L517	PU48530-821J	COIL	820μH
EQ501	PU60811	EQUALIZER	
LPF501	PU58022	LOW PASS FILTER	
BPF501	PELN0396	BAND PASS FILTER	
BPF502	PU60654	BAND PASS FILTER	
	or PU60654-2	BAND PASS FILTER	
CF501	PU57073	CERAMIC FILTER	
DL501	PU58971-3	2H DELAY LINE	
⚠ X501	PU60653	CRYSTAL UNITS	
CN501	PU58844-3R	CONNECTOR	
CN502	PU58844-8	CONNECTOR	
CN503	PU58844-8	CONNECTOR	
CN504	PU58844-3	CONNECTOR	
CN506	PU60417-4	CONNECTOR	

- SECAM DET SECTION -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
TP	PU57545	TEST PIN	
C607	QETC0JM-107	E CAPACITOR	100μF,6.3V
L601	PU48530-101K	COIL	100μH

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TERMINAL BOARD ASSEMBLY <06>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB30172D	TERMINAL BOARD ASSY	
R801	QRD161J-750	RESISTOR	75Ω,1/6W
R802	QRD161J-750	RESISTOR	75Ω,1/6W
SCW1	SDSF3008Z	SCREW,X2	
SCW2	SDSF3008Z	SCREW,X2	
⚠ TB1	PQ11416-2-1	T.BOARD(1)	
TB2	PU59592	PERRI CONNECTOR	
CN801	PU58844-3	CONNECTOR	
CN802	PU58844-2R	CONNECTOR	
CN803	PU58844-3	CONNECTOR	
CN804	PU58844-5	CONNECTOR	
CN805	PU58844-3	CONNECTOR	
CN807	PU58844-2	CONNECTOR	

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TUNER UNIT BOARD ASSEMBLY <07><08>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB10392N	TU UNIT BOARD ASSY	
BKT1	PQ33414-1-4	BRACKET 1	
BKT2	PQ45817	BRACKET(3)(L)	
BKT3	PQ45818	BRACKET(3)(R)	
BKT4	PQ33415-1-2	BRACKET(2)	
SCW1	SDST2608Z	SCREW,X2	
SLD1	PQ33416	SHIELD CASE	

- IF BOARD ASSEMBLY <07> -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA1	PB10392N1	IF BOARD ASSY	
IC1	M51365SP	IC	
Q1	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
Q2	2SC3354	TRANSISTOR	
Q3	2SC1317(RS)	TRANSISTOR	
Q4	2SA933S(S)	TRANSISTOR	
Q5	2SD1819A(RS)	TRANSISTOR	
Q6	FMS2	TRANSISTOR	
Q7	2SD1819A(RS)	TRANSISTOR	
Q8	2SA1532(C)	TRANSISTOR	
Q10	2SC3354	TRANSISTOR	
Q11	2SC3311A(RS)	TRANSISTOR	
Q13	DTC144EU	TRANSISTOR	
Q16	2SK381(C)	FE TRANSISTOR	
D1	MTZ10D	ZENER DIODE	
D6	DA204U	DIODE	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1	NRSA63J-750N	RESISTOR	75Ω,1/16W
R4	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R5	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R6	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R8	NRSA63J-681N	RESISTOR	680Ω,1/16W
R10	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R11	NRSA63J-121N	RESISTOR	120Ω,1/16W
R14	NRSA63J-101N	RESISTOR	100Ω,1/16W
R15	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R17	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R18	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R19	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R20	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R21	QVZ3518-472	V RESISTOR,RF AGC	4.7KΩ
R22	NRSA63J-824N	RESISTOR	820KΩ,1/16W
R24	NRSA63J-821N	RESISTOR	820Ω,1/16W
R31	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R32	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R33	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R34	NRSA63J-470N	RESISTOR	47Ω,1/16W
R35	NRSA63J-561N	RESISTOR	560Ω,1/16W
R36	NRSA63J-561N	RESISTOR	560Ω,1/16W
R37	NRSA63J-181N	RESISTOR	180Ω,1/16W
R38	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R39	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R40	QVPA606-103Z	V RESISTOR,COLOR LEVEL	10KΩ,16W
R45	NRSA63J-471N	RESISTOR	470Ω,1/16W
R46	NRSA63J-104N	RESISTOR	100KΩ,1/16W
R47	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R48	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R49	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R50	NRSA63J-821N	RESISTOR	820Ω,1/16W
R51	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R52	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R53	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R54	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R57	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R62	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R64	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R65	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R66	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R71	NRSA63J-681N	RESISTOR	680Ω,1/16W
R72	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R73	NRSA63J-331N	RESISTOR	330Ω,1/16W
R84	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R85	NRSA63J-752N	RESISTOR	7.5KΩ,1/16W
R87	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R92	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R93	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R94	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R95	NRSA63J-680N	RESISTOR	68Ω,1/16W
R99	NRSA63J-105N	RESISTOR	1MΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1	NCS31HJ-100A	CAPACITOR	10pF,50V
C5	NCB31HK-102A	CAPACITOR	0.001μF,50V
C7	NCB31HK-102A	CAPACITOR	0.001μF,50V
C8	NCB31HK-102A	CAPACITOR	0.001μF,50V
C9	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C10	QEKF1CM-107	E CAPACITOR	100μF,16V
C11	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C13	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C14	PU57601-474ME	E CAPACITOR	0.47μF
C15	QEKF1CM-336	E CAPACITOR	33μF,16V
C16	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C17	QCYA1HK-223	CAPACITOR	0.022μF,50V
C19	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C20	NCB31HK-102A	CAPACITOR	0.001μF,50V
C21	NCS31HJ-101A	CAPACITOR	100pF,50V
C22	QEKF1CM-106	E CAPACITOR	10μF,16V
C24	QEKF1HM-105	E CAPACITOR	1μF,50V
C25	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C26	QFN31HK-222	M CAPACITOR	0.0022μF,50V
C27	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C29	NCS31HJ-470A	CAPACITOR	47pF,50V
C31	QEKF1HM-335	E CAPACITOR	3.3μF,50V
C32	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C33	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C41	NCB31HK-102A	CAPACITOR	0.001μF,50V
C43	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C44	NCB31HK-102A	CAPACITOR	0.001μF,50V
C45	QCYA1HK-102	CAPACITOR	0.001μF,50V
C46	NCB31HK-102A	CAPACITOR	0.001μF,50V
C50	QEKF1CM-336	E CAPACITOR	33μF,16V
C56	QEKF1CM-336	E CAPACITOR	33μF,16V
C63	NCB31HK-102A	CAPACITOR	0.001μF,50V
C64	NCB31HK-391A	CAPACITOR	390pF,50V
L1	PU60025-R82	COIL	0.82μH
L2	PU60025-1R1	COIL	1.1μH
L3	PU60025-1R5	COIL	1.5μH
L4	PU59152-120J	COIL	12μH
L5	PU59152-220J	COIL	22μH
L6	PU59152-6R8J	COIL	6.8μH
L9	PU59152-6R8J	COIL	6.8μH
L11	PU59152-6R8J	COIL	6.8μH
L12	PU59152-6R8J	COIL	6.8μH
CF1	PU49295-2	N FILTER	
CF4	PU49295	CERAMIC FILTER	
CF7	PU32990-2	CERAMIC FILTER	
SAW1	PU36447-2	SAW FILTER	
SAW2	PU60765-3	SAW FILTER	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
T2	PU60932	IF.TRANSFORMER	
T4	PELN0363	COIL,S1 DET	
T5	PU60046	IF.TRANSFORMER,SYNC	
T8	PU60259	COIL,BUZZ TRAP	
CN1	PU58844-102	CONNECTOR	
CN2	PU58844-102R	CONNECTOR	

- TUNER CTL BOARD ASSEMBLY <08> -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA2	PB10392N2	TU /CTL BOARD ASSY	
⚠ RF1	PU60968	RF CONV. & SW	
⚠ TNR1	PERF0090-01-01	TUNER	
Q103	2SB810H,J	TRANSISTOR	
Q104	DTC144EU	TRANSISTOR	
Q106	2SC3313CTA	TRANSISTOR	
D101	HZT33-02	ZENER DIODE	
R102	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R103	QRD161J-153	RESISTOR	15KΩ,1/6W
R108	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R109	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R130	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R132	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
C101	QETA1CM-337	E CAPACITOR	330μF,16V
C102	QEKF1HM-225	E CAPACITOR	2.2μF,50V
C104	NCB31HK-102A	CAPACITOR	0.001μF,50V
C105	QCYA1HK-102	CAPACITOR	0.001μF,50V
C106	NCS31HJ-331A	CAPACITOR	330pF,50V
C107	NCS31HJ-471A	CAPACITOR	470pF,50V
C114	QEKF1CM-107	E CAPACITOR	100μF,16V
C123	QEKF1HM-106	E CAPACITOR	10μF,50V
C126	NCB31HK-103A	CAPACITOR	0.01μF,50V
L101	PU59152-R22K	COIL	0.22μH
L102	PU59152-6R8J	COIL	6.8μH
L105	PU59152-1R0J	COIL	1μH
JP1	PEMC0742-006	CONNECTOR(BOARD TO BOARD)	
JP2	PEMC0742-008	CONNECTOR(BOARD TO BOARD)	
JP3	PEMC0742-003	CONNECTOR(BOARD TO BOARD)	
JP4	PEMC0742-003	CONNECTOR(BOARD TO BOARD)	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
WR1	PW30401-BB13T	COAXIAL CORD	
	or PW30401-BB13S	COAXIAL CORD	
CN101	PU58844-4	CONNECTOR	
CN102	PU60417-7	CONNECTOR	

- DEMOD BOARD ASSEMBLY <14> -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA3	PB10392N3	DEMOD BOARD ASSY	
IC201	TDA3800GS	IC	
Q202	2SD1292(QR)	TRANSISTOR	
Q203	DTC114EU	TRANSISTOR	
Q204	DTC114EU	TRANSISTOR	
Q205	DTC114EU	TRANSISTOR	
Q206	DTC114EU	TRANSISTOR	
Q207	DTC114EU	TRANSISTOR	
Q208	DTC114EU	TRANSISTOR	
Q209	2SD1450S,T	TRANSISTOR	
	or 2SD1292(QR)	TRANSISTOR	
Q210	2SD1450S,T	TRANSISTOR	
	or 2SD1292(QR)	TRANSISTOR	
D202	1SS133	DIODE	
D203	1SS133	DIODE	
D204	1SS133	DIODE	
D206	1SS133	DIODE	
R202	QVPA606-103Z	V RESISTOR, STEREO SEP	10KΩ,16W
R203	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R204	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R205	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R206	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R207	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R208	QRSA08J-154YN	RESISTOR	150KΩ,1/10W
R209	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R210	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R211	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R212	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R213	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R214	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R215	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R216	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R217	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R221	QVPA606-332Z	V RESISTOR, L AUDIO LEV	3.3KΩ,16W
R222	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R223	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R224	QVPA606-332Z	V RESISTOR, R AUDIO LEV	3.3KΩ,16W
R225	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R226	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R240	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R241	QRD161J-272	RESISTOR	2.7KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R242	QRD161J-272	RESISTOR	2.7KΩ,1/6W
C201	QEKF1CM-106	E CAPACITOR	10μF,16V
C202	QFN31HK-392	M CAPACITOR	0.0039μF,50V
C203	QFN31HK-392	M CAPACITOR	0.0039μF,50V
C204	QFN31HK-392	M CAPACITOR	0.0039μF,50V
C205	QEKF1CM-106	E CAPACITOR	10μF,16V
C206	QEK41CM-106	E CAPACITOR	10μF,16V
C207	QEKF1CM-476	E CAPACITOR	47μF,16V
C208	QCYA1HK-223	CAPACITOR	0.022μF,50V
C209	QCYA1HK-473	CAPACITOR	0.047μF,50V
C210	QFP31HJ-102	M CAPACITOR	0.001μF,50V
C211	QEKF1CM-107	E CAPACITOR	100μF,16V
C212	QCYA1HK-473	CAPACITOR	0.047μF,50V
C213	QEKF1CM-106	E CAPACITOR	10μF,16V
C214	QEKF1CM-106	E CAPACITOR	10μF,16V
C215	QEKF1CM-336	E CAPACITOR	33μF,16V
C216	QETA1CM-227	E CAPACITOR	220μF,16V
C217	QEKF1HM-105	E CAPACITOR	1μF,50V
C218	QEKF1CM-476	E CAPACITOR	47μF,16V
BPF201	PU58226	BAND PASS FILTER	
CF201	PU52775	CERAMIC FILTER	
CF202	PU52775-2	CERAMIC FILTER	
T201	PU59489	COIL,SECOND AUDIO DET	
T202	PU59490	COIL	
CN201	PU58844-105	CONNECTOR	
CN202	PU58844-102	CONNECTOR	
CN203	PU58844-102	CONNECTOR	

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AUDIO UNIT BOARD ASSEMBLY <09>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB10395R-01	AUDIO UNIT BOARD ASSY	
IC1	PB20438B	FMA MODULE ASSY	
IC2	JCP0013	IC	
IC4	M34225M2-110SP	IC	
IC5	M5223P	IC	
Q1	2SC4097(QR)	TRANSISTOR	
Q4	2SC4081(QR)	TRANSISTOR	
Q5	2SC4081(QR)	TRANSISTOR	
Q6	DTA114EU	TRANSISTOR	
⚠ Q10	DTA144EU	TRANSISTOR	
⚠ Q11	DTA124EU	TRANSISTOR	
⚠ Q13	DTA114EU	TRANSISTOR	
Q16	2SC4081(QR)	TRANSISTOR	
Q19	DTC114EU	TRANSISTOR	
Q23	2SC4081(QR)	TRANSISTOR	
Q26	2SC4081(QR)	TRANSISTOR	
Q27	2SC4081(QR)	TRANSISTOR	
Q28	2SA1577(QR)	TRANSISTOR	
Q29	2SC4097(QR)	TRANSISTOR	
D1	DAN202U	DIODE	
D3	DAN202U	DIODE	
D4	DAN202U	DIODE	
D5	DAN202U	DIODE	
D6	DA204U	DIODE	
D7	DA204U	DIODE	
D8	DAN202U	DIODE	
D10	DAN202U	DIODE	
D12	HZ2BLL	ZENER DIODE	
D13	HZ2BLL	ZENER DIODE	
D14	1SS133	DIODE	
D16	DAN202U	DIODE	
D17	DAN202U	DIODE	
D21	DAN202U	DIODE	
D22	DAP202U	DIODE	
D23	1SS133	DIODE	
	or MA165	DIODE	
D24	1SS133	DIODE	
	or MA165	DIODE	
R1	QRSA08J-100YN	RESISTOR	10Ω,1/10W
R2	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R3	QRSA08J-820YN	RESISTOR	82Ω,1/10W
R12	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R22	QRSA08J-362YN	RESISTOR	3.6KΩ,1/10W
R23	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R24	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R25	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R26	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R27	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R29	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R30	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R31	QRSA08J-4R7YN	RESISTOR	4.7Ω,1/10W
R33	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R34	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R35	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R36	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R37	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R41	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R42	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R45	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R46	QRSA08J-393YN	RESISTOR	39KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R51	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R52	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R53	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R54	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R55	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R56	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R57	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R58	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R62	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R63	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R64	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R65	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R66	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R67	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R68	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R69	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R70	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R71	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R72	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R73	QRSA08J-132YN	RESISTOR	1.3KΩ,1/10W
R74	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R75	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R76	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R77	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R78	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R79	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R80	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R81	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R82	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R83	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R84	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R85	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R86	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R87	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R88	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R91	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R92	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R93	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R94	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R95	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R103	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R106	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R108	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R110	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R111	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R112	QRD182J-472	RESISTOR	4.7KΩ,1/8W
R114	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R115	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R116	QRD161J-273	RESISTOR	27KΩ,1/6W
R117	QRD161J-560	RESISTOR	56Ω,1/6W
C1	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C2	QCYA1HK-332	CAPACITOR	0.0033μF,50V
C3	QETC1EM-475	E CAPACITOR	4.7μF,25V
C4	QCSA1HJ-331	CAPACITOR	330pF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C5	QFV81HJ-333	TF CAPACITOR	0.033μF,50V
C6	QETC1CM-106	E CAPACITOR	10μF,16V
C9	QETC1HM-225	E CAPACITOR	2.2μF,50V
C10	QETB1AM-336	E CAPACITOR	33μF,10V
C11	QETC0JM-476	E CAPACITOR	47μF,6.3V
C21	QETC1CM-476	E CAPACITOR	47μF,16V
C25	QETC1CM-476	E CAPACITOR	47μF,16V
C26	QETC1CM-476	E CAPACITOR	47μF,16V
C27	QETC1CM-106	E CAPACITOR	10μF,16V
C28	QENC1CM-106	NP E CAPACITOR	10μF,16V
C31	QETC1HM-225	E CAPACITOR	2.2μF,50V
C32	QETC1EM-475	E CAPACITOR	4.7μF,25V
C34	QFV71HJ-223	TF CAPACITOR	0.022μF,50V
C35	QCYA1HK-682	CAPACITOR	0.0068μF,50V
C36	QCYA1HK-153	CAPACITOR	0.015μF,50V
C37	QCYA1HK-682	CAPACITOR	0.0068μF,50V
C38	QETC1CM-106	E CAPACITOR	10μF,16V
C39	QETC1AM-476	E CAPACITOR	47μF,10V
C40	QENC1CM-106	NP E CAPACITOR	10μF,16V
C41	QENC1CM-106	NP E CAPACITOR	10μF,16V
C43	QETC1CM-106	E CAPACITOR	10μF,16V
C44	QETC1AM-336	E CAPACITOR	33μF,10V
C45	QETC0JM-107	E CAPACITOR	100μF,6.3V
C46	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C47	QETC1AM-336	E CAPACITOR	33μF,10V
C48	QETC0JM-107	E CAPACITOR	100μF,6.3V
C51	QENC1CM-106	NP E CAPACITOR	10μF,16V
C52	QETC1AM-476	E CAPACITOR	47μF,10V
C53	QETC1CM-106	E CAPACITOR	10μF,16V
C54	QETC1CM-476	E CAPACITOR	47μF,16V
C55	QETC1CM-476	E CAPACITOR	47μF,16V
C56	QETC0JM-107	E CAPACITOR	100μF,6.3V
C57	QETC1CM-476	E CAPACITOR	47μF,16V
C58	QETC1CM-476	E CAPACITOR	47μF,16V
C60	QCYA1HK-102	CAPACITOR	0.001μF,50V
C62	QETC0JM-107	E CAPACITOR	100μF,6.3V
C63	QETC1CM-336	E CAPACITOR	33μF,16V
C64	QETC1CM-336	E CAPACITOR	33μF,16V
C65	QETC1CM-106	E CAPACITOR	10μF,16V
C66	QETC1HM-105	E CAPACITOR	1μF,50V
C67	QETC1CM-106	E CAPACITOR	10μF,16V
C70	QCYA1HK-102	CAPACITOR	0.001μF,50V
C71	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C72	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C75	QCYA1HK-153	CAPACITOR	0.015μF,50V
C76	QCYA1EK-223	CAPACITOR	0.022μF,25V
C79	QCC11CJ-104	CAPACITOR	0.1μF,16V
	or QCC11EJ-104	CAPACITOR	0.1μF,25V
C81	QCYA1HK-221	CAPACITOR	220pF,50V
C82	QCYA1HK-221	CAPACITOR	220pF,50V
C83	QCSA1HJ-681	CAPACITOR	680pF,50V
C86	QCYA1HK-103	CAPACITOR	0.01μF,50V
C87	QCYA1HK-103	CAPACITOR	0.01μF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L1	PU58308-472J	COIL	4.7mH
L2	PU48530-181J	COIL	180μH
L3	PU48530-101J	COIL	100μH
L5	PU48530-101J	COIL	100μH
BPF1	PU60610	BPF(1.4MHZ)	
BPF2	PU60611	BPF(1.8MHZ)	
⚠ CF1	PEVB0352	RESONATOR	
⚠ T1	PELN0351	OSC TRANSFORMER	
⚠	or PELN0562	OSC TRANSFORMER	
⚠ T2	PELN0340	OSC TRANSFORMER	
⚠	or PELN0532	OSC TRANSFORMER	
SPC1	PQM30029-149	SPACER	
CN1	PU58844-8	CONNECTOR	
CN2	PU58844-2	CONNECTOR	
CN3	PU60417-6	CONNECTOR	
CN4	PU58844-5	CONNECTOR	
CN5	PU58844-4	CONNECTOR	
CN6	PU58844-5	CONNECTOR	
CN7	PU60417-3	CONNECTOR	
CN8	PEMC0757-115	HOUSING	
CN9	PEMC0757-111	HOUSING	
CN10	PEMC0757-115	HOUSING	
CN11	PEMC0748-110	CONNECTOR	
CN12	PEMC0748-110	CONNECTOR	
CN13	PEMC0748-110	CONNECTOR	
⚠ CP1	ICP-F10	CIRCUIT PROTECTOR	
⚠ CP2	ICP-F10	CIRCUIT PROTECTOR	
⚠ CP3	ICP-F10	CIRCUIT PROTECTOR	

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VIDEO INTERFACE BOARD ASSEMBLY <10>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PWBA	PB10694D	VIDEO INTERFACE BOARD ASSY
TP	PU57545	TEST PIN,X6
	– I/O & SW SECTION –	
IC1	JCP0021	IC
IC2	BA7649A	IC
IC3	BA7644AN	IC
IC7	LVA523SA	IC
IC12	MC74HC04AN	IC
	or CD74HC04E	IC
	or TC74HC04AP	IC
Q1	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q2	DTC144ES	TRANSISTOR
Q4	DTC144WS	TRANSISTOR
Q5	DTA114ES	TRANSISTOR
Q6	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q7	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q9	2SA854S(QR)	TRANSISTOR
Q10	2SA854S(QR)	TRANSISTOR
Q11	2SA854S(QR)	TRANSISTOR
Q12	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q13	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q14	2SA854S(QR)	TRANSISTOR
Q15	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q16	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q19	2SD1468S(RS)	TRANSISTOR
Q21	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q22	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q23	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q25	DTC144WS	TRANSISTOR
Q27	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q29	DTC144WS	TRANSISTOR
Q30	DTC144WS	TRANSISTOR
Q31	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q32	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q33	2SC1740S(S)	TRANSISTOR
Q34	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q35	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q36	2SA933S(RS)	TRANSISTOR
	or 2SA1267(YG)-TJK	TRANSISTOR
Q38	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q39	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q46	DTC144ES	TRANSISTOR
Q48	DTC144ES	TRANSISTOR
Q49	DTC144WS	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q52	2SA933S(RS)	TRANSISTOR	
	or 2SA1267(YG)-TJK	TRANSISTOR	
Q59	DTC144WS	TRANSISTOR	
Q60	DTC144ES	TRANSISTOR	
Q61	2SK381(C)	FE TRANSISTOR	
Q62	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q63	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
D1	1SS133	DIODE	
	or MA165	DIODE	
D2	1SS133	DIODE	
	or MA165	DIODE	
D4	1SS133	DIODE	
	or MA165	DIODE	
D5	1SS133	DIODE	
	or MA165	DIODE	
D6	1SS133	DIODE	
	or MA165	DIODE	
D7	1SS133	DIODE	
	or MA165	DIODE	
D8	1SS133	DIODE	
	or MA165	DIODE	
D9	1SS133	DIODE	
	or MA165	DIODE	
D10	1SS133	DIODE	
	or MA165	DIODE	
D11	1SS133	DIODE	
	or MA165	DIODE	
D12	1SS133	DIODE	
	or MA165	DIODE	
D14	1SS133	DIODE	
	or MA165	DIODE	
D16	1SS133	DIODE	
	or MA165	DIODE	
D17	1SS133	DIODE	
	or MA165	DIODE	
D24	MTZ8.2BT-77	ZENER DIODE	
D25	1SS133	DIODE	
	or MA165	DIODE	
D26	1SS133	DIODE	
	or MA165	DIODE	
D27	1SS133	DIODE	
	or MA165	DIODE	
D28	1SS133	DIODE	
	or MA165	DIODE	
D29	1SS133	DIODE	
	or MA165	DIODE	
D30	1SS133	DIODE	
	or MA165	DIODE	
D31	1SS133	DIODE	
	or MA165	DIODE	
D32	1SS133	DIODE	
	or MA165	DIODE	
D33	1SS133	DIODE	
	or MA165	DIODE	
D34	1SS133	DIODE	
	or MA165	DIODE	
D35	1SS133	DIODE	
	or MA165	DIODE	
D38	1SS133	DIODE	
	or MA165	DIODE	
D39	1SS133	DIODE	
	or MA165	DIODE	
D41	1SS133	DIODE	
	or MA165	DIODE	
D46	1SS133	DIODE	
	or MA165	DIODE	
D47	1SS133	DIODE	
	or MA165	DIODE	
D50	1SS133	DIODE	
	or MA165	DIODE	
D51	1SS133	DIODE	
	or MA165	DIODE	
D52	1SS133	DIODE	
	or MA165	DIODE	
D53	1SS133	DIODE	
	or MA165	DIODE	
D55	1SS133	DIODE	
	or MA165	DIODE	
D58	1SS133	DIODE	
	or MA165	DIODE	
D59	1SS133	DIODE	
	or MA165	DIODE	
D60	1SS133	DIODE	
	or MA165	DIODE	
D61	1SS133	DIODE	
	or MA165	DIODE	
D62	1SS133	DIODE	
	or MA165	DIODE	
D64	1SS133	DIODE	
	or MA165	DIODE	
D65	1SS133	DIODE	
	or MA165	DIODE	
D66	1SS133	DIODE	
	or MA165	DIODE	
D67	1SS133	DIODE	
	or MA165	DIODE	
D68	1SS133	DIODE	
	or MA165	DIODE	
R1	QRD162J-101	RESISTOR	100Ω,1/6W
R2	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R3	QRD161J-103	RESISTOR	10KΩ,1/6W
R4	QRD161J-103	RESISTOR	10KΩ,1/6W
R6	QRD161J-103	RESISTOR	10KΩ,1/6W
R7	QRD161J-750	RESISTOR	75Ω,1/6W
R8	QRD161J-750	RESISTOR	75Ω,1/6W
R9	QRD161J-750	RESISTOR	75Ω,1/6W
R10	QRD161J-103	RESISTOR	10KΩ,1/6W
R11	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R12	QRD161J-103	RESISTOR	10KΩ,1/6W
R13	QRD161J-750	RESISTOR	75Ω,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R14	QRD161J-105	RESISTOR	1MΩ,1/6W
R15	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R17	QRD122J-391S	RESISTOR	390Ω,1/2W
R18	QRD122J-391S	RESISTOR	390Ω,1/2W
R19	QRD122J-391S	RESISTOR	390Ω,1/2W
R20	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R21	QRD161J-102	RESISTOR	1KΩ,1/6W
R22	QRD161J-102	RESISTOR	1KΩ,1/6W
R23	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R24	QRD161J-750	RESISTOR	75Ω,1/6W
R25	QRD161J-750	RESISTOR	75Ω,1/6W
R26	QRD161J-750	RESISTOR	75Ω,1/6W
R27	QRD161J-750	RESISTOR	75Ω,1/6W
R28	QRD161J-750	RESISTOR	75Ω,1/6W
R29	QRD161J-750	RESISTOR	75Ω,1/6W
R31	QRD161J-123	RESISTOR	12KΩ,1/6W
R32	QRD161J-101	RESISTOR	100Ω,1/6W
R34	QRD122J-391S	RESISTOR	390Ω,1/2W
R35	QRD161J-103	RESISTOR	10KΩ,1/6W
R36	QVPA606-103Z	V RESISTOR,EE LEVEL	10KΩ,16W
R37	QRD161J-223	RESISTOR	22KΩ,1/6W
R40	QRD162J-273	RESISTOR	27KΩ,1/6W
R41	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R42	QRD161J-242	RESISTOR	2.4KΩ,1/6W
R43	QRD161J-470	RESISTOR	47Ω,1/6W
R44	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R45	QRD161J-470	RESISTOR	47Ω,1/6W
⚠ R46	QRD161J-271	RESISTOR	270Ω,1/6W
R49	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R50	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R51	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R52	QRD161J-102	RESISTOR	1KΩ,1/6W
R53	QRD161J-102	RESISTOR	1KΩ,1/6W
R54	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R55	QRD161J-102	RESISTOR	1KΩ,1/6W
R56	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R57	QRD161J-473	RESISTOR	47KΩ,1/6W
R58	QRD161J-102	RESISTOR	1KΩ,1/6W
R59	QRD161J-223	RESISTOR	22KΩ,1/6W
R60	QRD161J-223	RESISTOR	22KΩ,1/6W
R61	QRD161J-223	RESISTOR	22KΩ,1/6W
R62	QRD161J-223	RESISTOR	22KΩ,1/6W
R63	QVPA606-333Z	V RESISTOR,S PB Y LEVEL	33KΩ,16W
R64	QVPA606-332Z	V RESISTOR,PB Y LEVEL	3.3KΩ,16W
R65	QRD161J-682	RESISTOR	6.8KΩ,1/6W
R66	QRD161J-333	RESISTOR	33KΩ,1/6W
R67	QRD161J-221	RESISTOR	220Ω,1/6W
R68	QRD161J-221	RESISTOR	220Ω,1/6W
R69	QRD161J-103	RESISTOR	10KΩ,1/6W
R70	QRD161J-223	RESISTOR	22KΩ,1/6W
R71	QRD161J-183	RESISTOR	18KΩ,1/6W
R72	QRD161J-101	RESISTOR	100Ω,1/6W
R73	QRD161J-183	RESISTOR	18KΩ,1/6W
R74	QRD161J-223	RESISTOR	22KΩ,1/6W
R77	QRD161J-223	RESISTOR	22KΩ,1/6W
R78	QRD161J-101	RESISTOR	100Ω,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R79	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R80	QRD161J-202	RESISTOR	2KΩ,1/6W
R81	QRD161J-103	RESISTOR	10KΩ,1/6W
R82	QRD161J-105	RESISTOR	1MΩ,1/6W
R83	QRD161J-183	RESISTOR	18KΩ,1/6W
R84	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R85	QRD161J-101	RESISTOR	100Ω,1/6W
R86	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R87	QRD161J-431	RESISTOR	430Ω,1/6W
R88	QRD161J-751	RESISTOR	750Ω,1/6W
R89	QRD161J-271	RESISTOR	270Ω,1/6W
R90	QRD161J-102	RESISTOR	1KΩ,1/6W
R91	QRD161J-821	RESISTOR	820Ω,1/6W
R92	QRD161J-623	RESISTOR	62KΩ,1/6W
R93	QRD161J-682	RESISTOR	6.8KΩ,1/6W
R94	QRD161J-123	RESISTOR	12KΩ,1/6W
R95	QRD161J-333	RESISTOR	33KΩ,1/6W
R96	QRD161J-563	RESISTOR	56KΩ,1/6W
R97	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R98	QRD161J-162	RESISTOR	1.6KΩ,1/6W
R99	QRD161J-102	RESISTOR	1KΩ,1/6W
R101	QRD161J-103	RESISTOR	10KΩ,1/6V
R107	QRD161J-222	RESISTOR	2.2KΩ,1/6V
R108	QRD161J-103	RESISTOR	10KΩ,1/6V
R109	QRD161J-223	RESISTOR	22KΩ,1/6V
R112	QRD161J-223	RESISTOR	22KΩ,1/6V
R113	QRD161J-104	RESISTOR	100KΩ,1/6V
R114	QRD161J-223	RESISTOR	22KΩ,1/6V
R122	QRD161J-102	RESISTOR	1KΩ,1/6V
R125	QRD161J-122	RESISTOR	1.2KΩ,1/6V
R127	QRD161J-563	RESISTOR	56KΩ,1/6V
R128	QRD161J-222	RESISTOR	2.2KΩ,1/6V
R131	QRD161J-183	RESISTOR	18KΩ,1/6V
R132	QRD161J-101	RESISTOR	100Ω,1/6V
R133	QRD161J-303	RESISTOR	30KΩ,1/6V
R134	QRD161J-101	RESISTOR	100Ω,1/6V
R138	QRD161J-562	RESISTOR	5.6KΩ,1/6V
R142	QRD161J-101	RESISTOR	100Ω,1/6
R143	QRD161J-331	RESISTOR	330Ω,1/6
R144	QRD161J-564	RESISTOR	560KΩ,1/6
R145	QRD161J-223	RESISTOR	22KΩ,1/6
R146	QRD161J-223	RESISTOR	22KΩ,1/6
R147	QRD161J-223	RESISTOR	22KΩ,1/6
C1	QETC0JM-476	E CAPACITOR	47μF,6.3
C2	QETC1HM-105	E CAPACITOR	1μF,50
C3	QCVB1CN-103	CAPACITOR	0.01μF,16
C4	QETC1HM-105	E CAPACITOR	1μF,50
C5	QENC1HM-105	NP E CAPACITOR	1μF,50
C6	QETC1HM-105	E CAPACITOR	1μF,50
C7	QETC1HM-105	E CAPACITOR	1μF,50
C8	QCSB1HJ-470	CAPACITOR	47pF,50
C9	QCVB1CN-103	CAPACITOR	0.01μF,16
C10	QCVB1CN-103	CAPACITOR	0.01μF,16

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C11	QCVB1CN-103	CAPACITOR	0.01μF,16V
C14	QCVB1CN-103	CAPACITOR	0.01μF,16V
C15	QETC0JM-476	E CAPACITOR	47μF,6.3V
C16	QCVB1CN-103	CAPACITOR	0.01μF,16V
C17	QCVB1CN-103	CAPACITOR	0.01μF,16V
C18	QETC1CM-476	E CAPACITOR	47μF,16V
C19	QCVB1CN-103	CAPACITOR	0.01μF,16V
C21	QCVB1CN-103	CAPACITOR	0.01μF,16V
C22	QCVB1CN-103	CAPACITOR	0.01μF,16V
C23	QETC1CM-476	E CAPACITOR	47μF,16V
C24	QCVB1CN-103	CAPACITOR	0.01μF,16V
C25	QETC1CM-476	E CAPACITOR	47μF,16V
C26	QETC1AM-226	E CAPACITOR	22μF,10V
C27	QCVB1CN-103	CAPACITOR	0.01μF,16V
C28	QCVB1CN-103	CAPACITOR	0.01μF,16V
C29	QETC0JM-477	E CAPACITOR	470μF,6.3V
C30	QETC0JM-477	E CAPACITOR	470μF,6.3V
C32	QCVB1CN-103	CAPACITOR	0.01μF,16V
C33	QETC1EM-106	E CAPACITOR	10μF,25V
C34	QETC1EM-106	E CAPACITOR	10μF,25V
C35	QCVB1CN-103	CAPACITOR	0.01μF,16V
C36	QETC1CM-476	E CAPACITOR	47μF,16V
C37	QCVB1CN-103	CAPACITOR	0.01μF,16V
C38	QETC1CM-476	E CAPACITOR	47μF,16V
C39	QCVB1CN-103	CAPACITOR	0.01μF,16V
C40	QETC1HM-105	E CAPACITOR	1μF,50V
C47	QCVB1CN-103	CAPACITOR	0.01μF,16V
C48	QCVB1CN-103	CAPACITOR	0.01μF,16V
C49	QETC0JM-107	E CAPACITOR	100μF,6.3V
C50	QCVB1CN-103	CAPACITOR	0.01μF,16V
C51	QETC1EM-335	E CAPACITOR	3.3μF,25V
C52	QETC1HM-474	E CAPACITOR	0.47μF,50V
C53	QETC1HM-224	E CAPACITOR	0.22μF,50V
C54	QFN31HJ-682	M CAPACITOR	0.0068μF,50V
C55	QETC0JM-107	E CAPACITOR	100μF,6.3V
C56	QCVB1CN-103	CAPACITOR	0.01μF,16V
C57	QETC1HM-474	E CAPACITOR	0.47μF,50V
C58	QETC1HM-474	E CAPACITOR	0.47μF,50V
C59	QETC1HM-474	E CAPACITOR	0.47μF,50V
C60	QCXB1CM-682	CAPACITOR	0.0068μF,16V
C61	QETC1HM-474	E CAPACITOR	0.47μF,50V
C62	QETC1HM-474	E CAPACITOR	0.47μF,50V
C63	QETC1HM-105	E CAPACITOR	1μF,50V
C64	QCVB1CN-103	CAPACITOR	0.01μF,16V
C65	QCVB1CN-103	CAPACITOR	0.01μF,16V
C66	QCVB1CN-103	CAPACITOR	0.01μF,16V
C68	QETC1HM-105	E CAPACITOR	1μF,50V
C69	QETC1HM-105	E CAPACITOR	1μF,50V
C70	QCVB1CN-103	CAPACITOR	0.01μF,16V
C71	QETC1CM-106	E CAPACITOR	10μF,16V
C72	QETC1HM-225	E CAPACITOR	2.2μF,50V
C73	QCVB1CN-103	CAPACITOR	0.01μF,16V
C74	QETC0JM-476	E CAPACITOR	47μF,6.3V
C76	QCVB1CN-103	CAPACITOR	0.01μF,16V
C77	QETC1CM-107	E CAPACITOR	100μF,16V
C78	QETC1CM-476	E CAPACITOR	47μF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C79	QETC1CM-106	E CAPACITOR	10μF,16V
C80	QCVB1CN-103	CAPACITOR	0.01μF,16V
C81	QETC1EM-335	E CAPACITOR	3.3μF,25V
C82	QCSB1HJ-330	CAPACITOR	33pF,50V
C83	QCSB1HJ-470	CAPACITOR	47pF,50V
C88	QETC0JM-476	E CAPACITOR	47μF,6.3V
C89	QCVB1CN-103	CAPACITOR	0.01μF,16V
C94	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C98	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C105	QCVB1CN-103	CAPACITOR	0.01μF,16V
L1	PU48530-101K	COIL	100μH
L2	PU48530-101K	COIL	100μH
L3	PU48530-101K	COIL	100μH
L4	PU48530-101K	COIL	100μH
L5	PU48530-101K	COIL	100μH
L7	PU48530-101K	COIL	100μH
L8	PU59988-100J	COIL	10μH
L10	PU48530-101K	COIL	100μH
L11	PU59153-101K	COIL	100μH
L12	PU48530-101K	COIL	100μH
L13	PU48530-101K	COIL	100μH
EQ1	PU60714	EQUALIZER	
LC1	PU60813	LCF	
TP	PU57545	TEST PIN,X8	
CN1	PU60417-5	CONNECTOR	
CN2	PU58844-2	CONNECTOR	
CN3	PU58844-6	CONNECTOR	
CN4	PU58844-2	CONNECTOR	
CN5	PEMC0749-110	CONNECTOR	
CN6	PEMC0749-110	CONNECTOR	
CN7	PEMC0749-110	CONNECTOR	
CN8	PU58844-7	CONNECTOR	
CN19	PU58844-3	CONNECTOR	

– Y/C SEPARATOR SECTION –

IC201	VC2063S	IC	
Q201	2SA933S(RS)	TRANSISTOR	
	or 2SA1267(YG)-TJK	TRANSISTOR	
Q202	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q203	2SA933S(RS)	TRANSISTOR	
	or 2SA1267(YG)-TJK	TRANSISTOR	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q204	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q205	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q206	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q207	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q208	2SA933S(RS)	TRANSISTOR	
	or 2SA1267(YG)-TJK	TRANSISTOR	
Q209	2SC1740S(QRS)	TRANSISTOR	
	or 2SC3199(YG)-TJK	TRANSISTOR	
Q210	DTC144ES	TRANSISTOR	
Q211	DTA144ES	TRANSISTOR	
R201	QRD161J-101	RESISTOR	100Ω,1/6W
R202	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R203	QRD161J-391	RESISTOR	390Ω,1/6W
R204	QRD161J-101	RESISTOR	100Ω,1/6W
R205	QRD161J-331	RESISTOR	330Ω,1/6W
R206	QVPA606-151Z	V RESISTOR,Y COMB GAIN	150Ω,16W
R207	QRD161J-102	RESISTOR	1KΩ,1/6W
R208	QRD161J-471	RESISTOR	470Ω,1/6W
R209	QRD161J-681	RESISTOR	680Ω,1/6W
R210	QRD161J-242	RESISTOR	2.4KΩ,1/6W
R211	QRD161J-391	RESISTOR	390Ω,1/6W
R212	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R213	ERT-D2FGL102S	THERMISTOR	
R214	QRD161J-223	RESISTOR	22KΩ,1/6W
R215	QVPA606-223Z	V RESISTOR,Y COMB-1	22KΩ,16W
R216	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R217	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R218	ERT-D2FHL332S	THERMISTOR	
R219	QVPA606-472Z	V RESISTOR,Y COMB-2	4.7KΩ,16W
R220	QRD161J-102	RESISTOR	1KΩ,1/6W
R221	QRD161J-102	RESISTOR	1KΩ,1/6W
R222	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R223	QRD161J-821	RESISTOR	820Ω,1/6W
R224	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R225	QRD161J-102	RESISTOR	1KΩ,1/6W
R226	QRD161J-181	RESISTOR	180Ω,1/6W
R227	QRD161J-821	RESISTOR	820Ω,1/6W
R228	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R229	QRD161J-821	RESISTOR	820Ω,1/6W
R230	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R231	QVPA606-471Z	V RESISTOR,Y COMB-3	470Ω,16W
R232	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R233	QRD161J-561	RESISTOR	560Ω,1/6W
R234	QVPA606-473Z	V RESISTOR,2H DLY CHROMA	47KΩ,16W
R235	QRD161J-561	RESISTOR	560Ω,1/6W
R236	QRD161J-391	RESISTOR	390Ω,1/6W
R237	QRD161J-391	RESISTOR	390Ω,1/6W
R239	QRD161J-223	RESISTOR	22KΩ,1/6W
R243	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R244	QRD161J-102	RESISTOR	1KΩ,1/6W
R245	QRD161J-563	RESISTOR	56KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R246	QRD161J-393	RESISTOR	39KΩ,1/6W
R247	QRD161J-123	RESISTOR	12KΩ,1/6W
C201	QCSB1HJ-470	CAPACITOR	47pF,50V
C202	QETC0JM-227	E CAPACITOR	220μF,6.3V
C203	QCVB1CN-103	CAPACITOR	0.01μF,16V
C204	QETC1CM-476	E CAPACITOR	47μF,16V
C205	QCVB1CN-103	CAPACITOR	0.01μF,16V
C206	QCVB1CN-103	CAPACITOR	0.01μF,16V
C207	QCBB1HJ-101	CAPACITOR	100pF,50V
C208	QCVB1CN-103	CAPACITOR	0.01μF,16V
C209	QCVB1CN-103	CAPACITOR	0.01μF,16V
C210	QCVB1CN-103	CAPACITOR	0.01μF,16V
C211	QCVB1CN-103	CAPACITOR	0.01μF,16V
C212	QCVB1CN-103	CAPACITOR	0.01μF,16V
C213	QCVB1CN-103	CAPACITOR	0.01μF,16V
C214	QETC0JM-227	E CAPACITOR	220μF,6.3V
C215	QCVB1CN-103	CAPACITOR	0.01μF,16V
C216	QCT25CH-470	CAPACITOR	47pF
C217	QCVB1CN-103	CAPACITOR	0.01μF,16V
C218	QETC1HM-105	E CAPACITOR	1μF,50V
C219	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C223	QCBB1HJ-101	CAPACITOR	100pF,50V
C224	QCVB1CN-103	CAPACITOR	0.01μF,16V
C225	QCVB1CN-103	CAPACITOR	0.01μF,16V
C226	QCVB1CN-103	CAPACITOR	0.01μF,16V
C227	QCVB1CN-103	CAPACITOR	0.01μF,16V
C228	QCVB1CN-103	CAPACITOR	0.01μF,16V
C229	QCVB1CN-103	CAPACITOR	0.01μF,16V
C230	QCSB1HJ-270	CAPACITOR	27pF,50V
L201	PU48530-101K	COIL	100μH
L202	PU48530-101K	COIL	100μH
L203	PELN0522	COIL	
L204	PU60165-8R2G	COIL	8.2μH
EQ201	PU60809	EQUALIZER	
EQ202	PU60810	EQUALIZER	
BPF201	PU60921	BAND PASS FILTER	
BPF202	PU60808-2	BAND PASS FILTER	
DL201	PELN0565	DELAY LINE	

- TERMINAL SECTION -

R601	QRD161J-221	RESISTOR	220Ω,1/6W
R602	QRD161J-221	RESISTOR	220Ω,1/6W
SCW1	SDSF3010Z	SCREW	
SKT1	PEMC0766	RGB21PIN SOCKET	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
JA1,2	PU61048	S.CONNECT,X2	
CN602	PU58844-6	CONNECTOR	
CN604	PU58844-2	CONNECTOR	

- ON SCREEN SECTION -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
IC901	M50554-263SP	IC	
IC902	M52684AP	IC	
Q901	DTA114ES	TRANSISTOR	
Q902	DTA114ES	TRANSISTOR	
Q911	DTC124ES	TRANSISTOR	
Q912	DTC124ES	TRANSISTOR	
Q913	DTC144WS	TRANSISTOR	
Q914	DTC124ES	TRANSISTOR	
Q915	2SA933S(RS)	TRANSISTOR	
	or 2SA1267(YG)-TJK	TRANSISTOR	
D901	1SS133	DIODE	
	or MA165	DIODE	
D902	1SS133	DIODE	
	or MA165	DIODE	
D906	1SS133	DIODE	
	or MA165	DIODE	
D907	1SS133	DIODE	
	or MA165	DIODE	
D908	1SS133	DIODE	
	or MA165	DIODE	
R901	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R902	QRD161J-103	RESISTOR	10KΩ,1/6W
R903	QRD161J-681	RESISTOR	680Ω,1/6W
R904	QRD161J-103	RESISTOR	10KΩ,1/6W
R905	QRD161J-102	RESISTOR	1KΩ,1/6W
R906	QRD161J-471	RESISTOR	470Ω,1/6W
R907	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R908	QRD161J-362	RESISTOR	3.6KΩ,1/6W
R909	QRD161J-512	RESISTOR	5.1KΩ,1/6W
R910	QRD161J-202	RESISTOR	2KΩ,1/6W
R911	QRD161J-622	RESISTOR	6.2KΩ,1/6W
R912	QRD161J-123	RESISTOR	12KΩ,1/6W
R913	QRD161J-123	RESISTOR	12KΩ,1/6W
R914	QRD161J-103	RESISTOR	10KΩ,1/6W
R915	QRD161J-102	RESISTOR	1KΩ,1/6W
R916	QRD161J-105	RESISTOR	1MΩ,1/6W
R917	QRD161J-102	RESISTOR	1KΩ,1/6W
R918	QRD161J-471	RESISTOR	470Ω,1/6W
R920	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R921	QRD161J-271	RESISTOR	270Ω,1/6W
R922	QRD161J-103	RESISTOR	10KΩ,1/6W
R923	QRD161J-473	RESISTOR	47KΩ,1/6W
R924	QRD161J-153	RESISTOR	15KΩ,1/6W
R951	QRD161J-103	RESISTOR	10KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R952	QRD161J-103	RESISTOR	10KΩ,1/6W
R953	QRD161J-103	RESISTOR	10KΩ,1/6W
R954	QRD161J-103	RESISTOR	10KΩ,1/6W
R955	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R956	QRD161J-103	RESISTOR	10KΩ,1/6W
C903	QETC0JM-227	E CAPACITOR	220µF,6.3V
C904	QCVB1CN-103	CAPACITOR	0.01µF,16V
C905	QAT3120-450	TRIMMER CAPACITOR,DOT CLOCK	45pF
C906	QCSB1HJ-220	CAPACITOR	22pF,50V
C907	QCSB1HJ-330	CAPACITOR	33pF,50V
C908	QCSB1HJ-360	CAPACITOR	36pF,50V
C909	QCVB1CN-103	CAPACITOR	0.01µF,16V
C910	QCSB1HJ-270	CAPACITOR	27pF,50V
C911	QCVB1CN-103	CAPACITOR	0.01µF,16V
C912	QCSB1HJ-270	CAPACITOR	27pF,50V
C915	QCT25CH-150	CAPACITOR	15pF
C916	QAT3120-200	TRIMMER CAPACITOR,COLOR BURST	20pF
C917	QCT25CH-5R0	CAPACITOR	5pF
C918	QCVB1CN-103	CAPACITOR	0.01µF,16V
C919	QETC0JM-227	E CAPACITOR	220µF,6.3V
C921	QCBB1HJ-331	CAPACITOR	330pF,50V
C922	QFN31HJ-222	M CAPACITOR	0.0022µF,50V
C923	QETC1HM-105	E CAPACITOR	1µF,50V
C924	QCVB1CN-103	CAPACITOR	0.01µF,16V
C925	QCSB1HJ-220	CAPACITOR	22pF,50V
C928	QCXB1CM-152	CAPACITOR	0.0015µF,16V
C932	QETC1HM-335	E CAPACITOR	3.3µF,50V
C941	QCBB1HJ-101	CAPACITOR	100pF,50V
TP	PU57545	TEST PIN,X2	
L901	PU48530-101K	COIL	100µH
L902	PU59988-220JY	COIL	22µH
L903	PU59988-8R2JY	COIL	8.2µH
L904	PU59988-150J	COIL	15µH
L905	PU59988-220JY	COIL	22µH
L906	PU59988-220JY	COIL	22µH
L907	PU48530-101K	COIL	100µH
⚠ CF901	PU60086	RESONATOR	
⚠ X901	PU60908	CRYSTAL RESONATOR	
CN901	PU60417-6	CONNECTOR	

- OTHERS SECTION -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R301	QVPA606-332Z	V RESISTOR,EE BALANCE	3.3KΩ,16W
R302	QVPA606-473Z	V RESISTOR,EE LEVEL	47KΩ,16W
R303	QRD161J-221	RESISTOR	220Ω,1/6W
R304	QVPA606-683Z	V RESISTOR,BIAS	68KΩ,16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R305	QRD161J-100	RESISTOR	10Ω,1/6W
CL1	PU59311-3	WIRE CLAMP	
CL2	PU59311-4	WIRE CLAMP	
HD1	PU60521	PWB HOLDER(A)	
HD2	PU60522	PWB HOLDER(B)	
SLD1	PQ42995-1-1	SHIELD CASE	
SPC1	PU60010-2	SPACER	
TP	PU57545	TEST PIN,X3	

– VIDEO SUB SECTION –

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
IC501	LVA523SA	IC
IC503	TC74HC4066AP	IC
	or MC74HC4066N	IC
Q502	DTC144WS	TRANSISTOR
Q503	2SC1740S(QRS)	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
Q504	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q505	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q506	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q507	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q508	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q509	2SC1740S(QRS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q510	DTC144ES	TRANSISTOR
Q511	2SC1740S(RS)	TRANSISTOR
	or 2SC3199(YG)-TJK	TRANSISTOR
	or 2SC3311A(RS)	TRANSISTOR
	or 2SC536SPA(FG)	TRANSISTOR
Q512	DTC144WS	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D501	1SS133	DIODE	
	or MA165	DIODE	
D502	1SS133	DIODE	
	or MA165	DIODE	
D503	1SS133	DIODE	
	or MA165	DIODE	
D505	1SS133	DIODE	
	or MA165	DIODE	
D506	1SS133	DIODE	
	or MA165	DIODE	
D507	1SS133	DIODE	
	or MA165	DIODE	
R501	QRD161J-103	RESISTOR	10KΩ,1/6W
R502	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R504	QRD161J-223	RESISTOR	22KΩ,1/6W
R505	QRD161J-223	RESISTOR	22KΩ,1/6W
R506	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R507	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R508	QRD161J-102	RESISTOR	1KΩ,1/6W
R509	QRD161J-102	RESISTOR	1KΩ,1/6W
R510	QRD161J-223	RESISTOR	22KΩ,1/6W
R511	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R512	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R513	QRD161J-331	RESISTOR	330Ω,1/6W
R514	QRD161J-221	RESISTOR	220Ω,1/6W
R515	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R516	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R517	QRD161J-223	RESISTOR	22KΩ,1/6W
R518	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R519	QRD161J-103	RESISTOR	10KΩ,1/6W
R520	QRD161J-223	RESISTOR	22KΩ,1/6W
R521	QRD161J-223	RESISTOR	22KΩ,1/6W
R522	QRD161J-103	RESISTOR	10KΩ,1/6W
R523	QRD161J-683	RESISTOR	68KΩ,1/6W
R524	QRD161J-393	RESISTOR	39KΩ,1/6W
R525	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R526	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R527	QRD161J-473	RESISTOR	47KΩ,1/6W
R528	QRD161J-103	RESISTOR	10KΩ,1/6W
C501	QETC1EM-106	E CAPACITOR	10µF,25V
C502	QETC1EM-106	E CAPACITOR	10µF,25V
C503	QETC0JM-476	E CAPACITOR	47µF,6.3V
C504	QCVB1CN-103	CAPACITOR	0.01µF,16V
C507	QCVB1CN-103	CAPACITOR	0.01µF,16V
C510	QCVB1CN-103	CAPACITOR	0.01µF,16V
C511	QCVB1CN-103	CAPACITOR	0.01µF,16V
C512	QCVB1CN-103	CAPACITOR	0.01µF,16V
C513	QCSB1HJ-560	CAPACITOR	56pF,50V
C514	QCVB1CN-103	CAPACITOR	0.01µF,16V
C515	QCVB1CN-103	CAPACITOR	0.01µF,16V
C516	QCVB1CN-103	CAPACITOR	0.01µF,16V
C517	QCVB1CN-103	CAPACITOR	0.01µF,16V
C518	QCBB1HJ-561	CAPACITOR	560pF,50V
C519	QCVB1CN-103	CAPACITOR	0.01µF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C521	QETC1CM-106	E CAPACITOR	10μF,16V
C522	QETC1HM-105	E CAPACITOR	1μF,50V
C523	QETC1CM-106	E CAPACITOR	10μF,16V
C524	QCSB1HJ-470	CAPACITOR	47pF,50V
C526	QCVB1CN-103	CAPACITOR	0.01μF,16V
L502	PU48530-101K	COIL	100μH
L503	PU48530-101K	COIL	100μH
L504	PU48530-101K	COIL	100μH
L505	PU59988-180J	COIL	18μH
BPF501	PU57072	BAND PASS FILTER	
	or PU57072-2	BAND PASS FILTER	
CN501	PU60417-3	CONNECTOR	
CN502	PU58844-2R	CONNECTOR	
CN503	PU58844-5	CONNECTOR	

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AUDIO/CTL HEAD BOARD <12>

PWB1	PB40046-01-02	A/C HEAD BOARD	
CN1	PU58844-104	CAP HOUSING	
CN2	PU58844-103	CAP HOUSING	

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TIMER BOARD ASSEMBLY <20>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB20609F	TIMER BOARD ASSY	
IC1	UPD75218CW-013	IC	
IC2	IC-PST523H-2	IC	
Q1	2SC3199(G)	TRANSISTOR	
	or 2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(FG)	TRANSISTOR	
	or 2SC1740S(RS)	TRANSISTOR	
Q2	DTC144ES	TRANSISTOR	
D1	RD9.1ES-T1B2	ZENER DIODE	
D2	1SS133	DIODE	
D3	1SS133	DIODE	
D4	11ES2	DIODE	
D5	11ES2	DIODE	
D6	1SS133	DIODE	
D7	1SS133	DIODE	
D8	1SS133	DIODE	
D28	1SS133	DIODE	
	or MA165	DIODE	
D35	1SS133	DIODE	
	or MA165	DIODE	
D36	1SS133	DIODE	
	or MA165	DIODE	
D37	1SS133	DIODE	
	or MA165	DIODE	
D38	1SS133	DIODE	
	or MA165	DIODE	
R1	QRD161J-103	RESISTOR	10KΩ,1/6W
R4	QRD161J-682	RESISTOR	6.8KΩ,1/6W
R5	QRD161J-333	RESISTOR	33KΩ,1/6W
R6	QRD161J-333	RESISTOR	33KΩ,1/6W
R7	QRD161J-102	RESISTOR	1KΩ,1/6W
R8	QRD161J-103	RESISTOR	10KΩ,1/6W
R9	QRD161J-103	RESISTOR	10KΩ,1/6W
R10	QRD161J-103	RESISTOR	10KΩ,1/6W
R11	QRD161J-103	RESISTOR	10KΩ,1/6W
R12	QRD161J-333	RESISTOR	33KΩ,1/6W
R13	QRD161J-271	RESISTOR	270Ω,1/6W
R14	QRD161J-271	RESISTOR	270Ω,1/6W
R15	QRD161J-103	RESISTOR	10KΩ,1/6W
R16	QRD161J-103	RESISTOR	10KΩ,1/6W
R17	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R25	QRD161J-103	RESISTOR	10KΩ,1/6W
R26	QRD161J-103	RESISTOR	10KΩ,1/6W
R30	QRD161J-224	RESISTOR	220KΩ,1/6W
R32	QRD161J-271	RESISTOR	270Ω,1/6W
R33	QRD161J-271	RESISTOR	270Ω,1/6W
R40	QRD161J-271	RESISTOR	270Ω,1/6W
R41	QRD161J-103	RESISTOR	10KΩ,1/6W
R42	QRD161J-561	RESISTOR	560Ω,1/6W
R43	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R44	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R45	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R49	QRD161J-271	RESISTOR	270Ω,1/6W
R50	QRD161J-103	RESISTOR	10KΩ,1/6W
R51	QRD161J-103	RESISTOR	10KΩ,1/6W
R52	QRD161J-103	RESISTOR	10KΩ,1/6W
R53	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R54	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R55	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R56	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R57	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R58	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R60	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R61	QRD161J-333	RESISTOR	33KΩ,1/6W
R62	QRD161J-103	RESISTOR	10KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R63	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R64	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R65	QRD161J-472	RESISTOR	4.7KΩ,1/6W
RA1	QRB047J-333	RESISTOR ARRAY	33KΩ,4W
	or QRB049J-333	RESISTOR ARRAY	33KΩ,4W
RA2	QRB047J-104	NETWORK RESISTOR	100KΩ,4W
	or QRB049J-104	NETWORK RESISTOR	100KΩ,4W
RA3	QRB077J-104	RESISTOR ARRAY	100KΩ,7W
	or QRB079J-104	RESISTOR ARRAY	100KΩ,7W
C3	QCVB1CN-103	CAPACITOR	0.01μF,16V
C4	QER61CM-106	E CAPACITOR	10μF,16V
C5	PU60676-104	E CAPACITOR	0.1F,5.5V
	or QEA40HZ-104	E CAPACITOR (DOUBLE)	0.1F,5.5V
C6	QAT3120-200	TRIMMER CAPACITOR,TIMER CLOCK	20pF
C7	QCSB1HJ-120	CAPACITOR	12pF,50V
C11	QER61CM-106	E CAPACITOR	10μF,16V
C13	QCVB1CN-103	CAPACITOR	0.01μF,16V
C15	QCBB1HJ-101	CAPACITOR	100pF,50V
C16	QCBB1HJ-101	CAPACITOR	100pF,50V
C17	QCF11HP-473	CAPACITOR	0.047μF,50V
C18	QER61CM-106	E CAPACITOR	10μF,16V
C19	QER61CM-106	E CAPACITOR	10μF,16V
C21	QCVB1CN-103	CAPACITOR	0.01μF,16V
C22	QCBB1HJ-151	CAPACITOR	150pF,50V
C23	QCBB1HJ-151	CAPACITOR	150pF,50V
⚠ X1	PU60226-4	CRYSTAL RESONATOR	
CN1	PU60417-108	CONNECTOR	
CN2	PU60417-114	CONNECTOR	
CN3	PU60417-106	CONNECTOR	
CN4	PU60417-103	CONNECTOR	
CN5	PU59555-7	CONNECTOR	
CN6	PU60417-108	CONNECTOR	
CN7	PU58844-103	CONNECTOR	
⚠ CP1	ICP-F10	CIRCUIT PROTECTOR	

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SW/DISPLAY BOARD ASSEMBLY <28>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB10695D-01	SW/DISP BOARD ASSY	
IC101	MSC7112-01SS	IC	
Q101	2SK658	FE TRANSISTOR	
Q105	DTC124ES	TRANSISTOR	
Q106	2SC3199(G)	TRANSISTOR	
	or 2SC1740S(RS)	TRANSISTOR	
	or 2SC536SPA(FG)	TRANSISTOR	
	or 2SC3311A(RS)	TRANSISTOR	
Q107	2SC3199(G)	TRANSISTOR	
	or 2SC1740S(RS)	TRANSISTOR	
	or 2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(FG)	TRANSISTOR	
Q108	2SC3199(G)	TRANSISTOR	
	or 2SC1740S(RS)	TRANSISTOR	
	or 2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(FG)	TRANSISTOR	
D102	RD3.6ES-T1B1	ZENER DIODE	
D106	SLH-34MC3F	LE DIODE,S-VHS	
D107	SLH-34MC3F	LE DIODE,AT TRACK	
D108	SLH-34MC3F	LE DIODE,WIDE ASPEC	
D110	1SS133	DIODE	
	or MA165	DIODE	
D111	1SS133	DIODE	
	or MA165	DIODE	
D112	1SS133	DIODE	
	or MA165	DIODE	
D114	1SS133	DIODE	
	or MA165	DIODE	
D115	1SS133	DIODE	
	or MA165	DIODE	
D117	1SS133	DIODE	
	or MA165	DIODE	
D118	1SS133	DIODE	
	or MA165	DIODE	
D119	1SS133	DIODE	
	or MA165	DIODE	
D120	1SS133	DIODE	
	or MA165	DIODE	
D121	1SS133	DIODE	
	or MA165	DIODE	
D122	1SS133	DIODE	
	or MA165	DIODE	
D203	SLH-34VC3F	LE DIODE	
D204	SLH-34MC3F	LE DIODE	
D223	1SS132	DIODE	
D229	1SS133	DIODE	
R101	QRD161J-102	RESISTOR	1KΩ,1/6V
R102	QRD161J-102	RESISTOR	1KΩ,1/6V
R103	QRD161J-222	RESISTOR	2.2KΩ,1/6V
R104	QRD161J-273	RESISTOR	27KΩ,1/6V
R105	QRD161J-333	RESISTOR	33KΩ,1/6V
R107	QRD161J-102	RESISTOR	1KΩ,1/6V
R112	QRD161J-121	RESISTOR	120Ω,1/6V
R113	QRD161J-121	RESISTOR	120Ω,1/6V
R114	QRD161J-121	RESISTOR	120Ω,1/6V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R115	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R116	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R117	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R203	QRD161J-221	RESISTOR	220Ω,1/6W
R204	QRD161J-221	RESISTOR	220Ω,1/6W
C101	QCBB1HJ-101	CAPACITOR	100pF,50V
C102	QETC1HM-104	E CAPACITOR	0.1μF,50V
C103	QETC0JM-107	E CAPACITOR	100μF,6.3V
C104	QCVB1CN-103	CAPACITOR	0.01μF,16V
C105	QER61VM-106	E CAPACITOR	10μF,35V
C115	QCSB1HJ-330	CAPACITOR	33pF,50V
C116	QCSB1HJ-330	CAPACITOR	33pF,50V
C117	QCF11HP-473	CAPACITOR	0.047μF,50V
L101	PU59152-221J	COIL	220μH
S13	PESW0525-02Z	TACT SWITCH,MIX	
	or PU60392-2-2	TACT SWITCH	
	or PU60975-2Z	TACT SWITCH	
S14	PESW0525-02Z	TACT SWITCH,SIMUL	
	or PU60392-2-2	TACT SWITCH	
	or PU60975-2Z	TACT SWITCH	
S15	PESW0525-02Z	TACT SWITCH,A DUB	
	or PU60392-2-2	TACT SWITCH	
	or PU60975-2Z	TACT SWITCH	
S16	PESW0525-02Z	TACT SWITCH,INSERT	
	or PU60392-2-2	TACT SWITCH	
	or PU60975-2Z	TACT SWITCH	
S28	PESW0525-02Z	TACT SWITCH,TV/VIDEO	
	or PU60392-2-2	TACT SWITCH	
	or PU60975-2Z	TACT SWITCH	
S34	PESW0525-02Z	TACT SWITCH,S-VHS	
	or PU60975-2Z	TACT SWITCH	
	or PU60392-2-2	TACT SWITCH	
S35	PESW0525-02Z	TACT SWITCH,S/AV	
	or PU60392-2-2	TACT SWITCH	
	or PU60975-2Z	TACT SWITCH	
S404	PESW0635	SLIDE SWITCH,WA REC	
S405	PESW0559-03	SLIDE SWITCH,REPEAT	
S406	PESW0635	SLIDE SWITCH,AV IN/OUT SEL	
FDP1	PEDP0079	FLUORESCENT DISPLAY PANEL	
HD1	PQM30038-2-2	LED HOLDER	
HD2	PQ34413	FDP HOLDER(L)	
HD3	PQ34414	FDP HOLDER(R)	
CN8	PU60417-5	CONNECTOR	
CN9	PU58844-2	CONNECTOR	
CN10	PU60417-108	CONNECTOR	
CN11	PU60417-114	CONNECTOR	
CN12	PU60417-5	CONNECTOR	
CN13	PU59555-3	CONNECTOR	
CN14	PU58844-2	CONNECTOR	
CN15	PEMC0878-010	CONNECTOR	

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IFR BOARD ASSEMBLY <34>

PWBA	PB20598B2-01	IFR BOARD ASSY
IC1	GP1U541X	IR DETECT UNIT
	or GP1U801X	IR DETECT UNIT
CN10	PU59555-3	CONNECTOR

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SW/JACK BOARD ASSEMBLY <37>

PWBA1	PB20598B1-01	SW/JACK BOARD ASSY	
Q1	DTC114ES	TRANSISTOR	
D1	SLR-55VC3F	LE DIODE, OPERATE	
D2	1SS133	DIODE	
	or MA165	DIODE	
D3	1SS133	DIODE	
	or MA165	DIODE	
D4	1SS133	DIODE	
	or MA165	DIODE	
D5	1SS133	DIODE	
	or MA165	DIODE	
D6	1SS133	DIODE	
	or MA165	DIODE	
R1	PERE0483-02	V RESISTOR,HEAD PHONE LEVEL	
R7	PERE0513	V RESISTOR, REC BALANCE	
R8	PERE0512	V RESISTOR, REC MAIN	
R9	PERE0514	V RESISTOR, MIC MIX	
R10	QRD161J-221	RESISTOR	220Ω,1/6W
R11	QRD161J-103	RESISTOR	10KΩ,1/6W
C1	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C2	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C3	QCBB1HJ-681	CAPACITOR	680pF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C4	QCBB1HJ-681	CAPACITOR	680pF,50V
	L1	PU59152-120J	COIL	12μH
	L2	PU59152-120J	COIL	12μH
	L3	PU59152-6R8J	COIL	6.8μH
	L4	PU59152-6R8J	COIL	6.8μH
	L5	PU59152-2R7J	COIL	2.7μH
	L6	PU59152-2R7J	COIL	2.7μH
	S1	PU57551	TACT SWITCH,OPERATE	
		or PU53598-2	TACT SWITCH	
	K1	PU60281-5	FERRATE BEADS	
	HD1	PQM30038-1-2	LED HOLDER, FOR D1(LED)	
	JA1	PU60664	MINI JACK, H.PHONE	
	JA2	PU60664-3	MINI JACK, MIC	
	JA3	PU60664-7	MINI JACK, PAUSE-IN	
	JA4	PEMC0762	AV JACK, FRONT AV	
	SPC1	PU59210-003	W.LOKING SPACER,X2	
	CN1	PU58844-3	CONNECTOR	
	CN2	PU60417-6	CONNECTOR	
	CN3	PU58844-5	CONNECTOR	
	CN4	PU58844-2	CONNECTOR	
	CN5	PU58844-7	CONNECTOR	
	CN6	PU58844-4	CONNECTOR	
	CN7	PU60417-5	CONNECTOR	

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PRE AMP BOARD ASSEMBLY <42>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	PB20473A-02	PRE AMP BOARD ASSY	
	IC1	TA8609F	IC	
	Q1	2SC2778	TRANSISTOR	
	Q2	2SC2778	TRANSISTOR	
	Q3	2SC2778	TRANSISTOR	
	Q4	2SC2778	TRANSISTOR	
	Q5	2SC2778	TRANSISTOR	
	Q6	2SC2778	TRANSISTOR	
	Q7	2SC2778	TRANSISTOR	
	Q8	2SC2778	TRANSISTOR	
	Q9	2SC2412K	TRANSISTOR	
	Q10	2SC2412K	TRANSISTOR	
	Q11	DTA124EK	TRANSISTOR	
	Q12	DTA124EK	TRANSISTOR	
	Q13	DTC144EK	TRANSISTOR	
	Q14	DTC144EK	TRANSISTOR	
	D1	DAP202K	DIODE	
	D2	DAP202K	DIODE	
	R1	QRSA08J-100YN	RESISTOR	10Ω,1/10W
	R2	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
	R3	QRSA08J-100YN	RESISTOR	10Ω,1/10W
	R4	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
	R5	QRSA08J-100YN	RESISTOR	10Ω,1/10W
	R6	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
	R7	QRSA08J-100YN	RESISTOR	10Ω,1/10W
	R8	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
	R9	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R10	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	R11	NVP1301-152NZ	V RESISTOR	1.5KΩ
	R12	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R13	QRSA08J-391YN	RESISTOR	390Ω,1/10W
	R14	NVP1301-152N	V RESISTOR	1.5KΩ
	R15	NVP1301-152N	V RESISTOR	1.5KΩ
	R16	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R17	NVP1301-152N	V RESISTOR	1.5KΩ
	R18	QRSA08J-391YN	RESISTOR	390Ω,1/10W
	R19	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	R20	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	R21	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	R22	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	R23	QRSA08J-561YN	RESISTOR	560Ω,1/10W
	R24	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R25	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	R26	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R27	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	C1	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C2	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C3	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C4	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C6	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C7	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C8	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C9	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C10	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C11	PU60733-200Z	TRIMMER CAPACITOR	20pF
		or PECA0779-200X	TRIMMER CAPACITOR	
	C12	PU60733-300Z	TRIMMER CAPACITOR	30pF
		or PECA0779-300X	TRIMMER CAPACITOR	
	C13	PU60733-200Z	TRIMMER CAPACITOR	20pF
		or PECA0779-200X	TRIMMER CAPACITOR	
	C14	PU60733-200Z	TRIMMER CAPACITOR	20pF
		or PECA0779-200X	TRIMMER CAPACITOR	
	C15	QCFA1HZ-103	CAPACITOR	0.01μF,50
	C16	QCFA1HZ-103	CAPACITOR	0.01μF,50
	C17	QER41HM-105	E CAPACITOR	1μF,50

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C18	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C19	QER41HM-105	E CAPACITOR	1μF,50V
C20	QER41HM-105	E CAPACITOR	1μF,50V
C21	QCSA1HJ-101	CAPACITOR	100pF,50V
C22	QER41HM-105	E CAPACITOR	1μF,50V
C23	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C24	QER40JM-476	E CAPACITOR	47μF,6.3V
C25	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C30	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C31	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C32	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C33	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C34	QCFA1HZ-103	CAPACITOR	0.01μF,50V
L1	PU59988-100JY	COIL	10μH
L2	PU59988-120JY	COIL	12μH
L3	PU59988-100JY	COIL	10μH
L4	PU59988-120JY	COIL	12μH
L5	PU48530-101K	COIL	100μH
SLD1	PQ33468-1-4	SHIELD COVER(1)	
SLD2	PQ44696	SHIELD COVER(2)	
SLD3	PQ33385A-2	SHIELD PLATE ASSY	
TP1	PU56008	TEST-PIN	
CN1	PU58250-18	CAP HOUSING	
CN2	PU58844-3	CAP HOUSING	
CN3	YU40106-13	1.0 FPC R/A(U)	

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REC AMP BOARD ASSEMBLY <43>

PWBA	PB10404G	REC AMP BOARD ASSY
CL1	PU59311-3	WIRE CLAMP
CL2	PU56729-2	WIRE CLAMP
SLD1	PQ21044-1-1	SHIELD FRAME
SLD2	PQ21045-1-2	SHIELD CASE
SLD3	PQ33421-1-1	SHIELD PLATE
SPC1	PQM30029-182	SPACER

– VIDEO REC SECTION –

IC1	TA8733F	IC
IC2	JCP0023	IC

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
Q2	2SC4081(QRS)	TRANSISTOR	
Q4	DTA124EU	TRANSISTOR	
Q5	DTA124EU	TRANSISTOR	
Q6	DTC144EU	TRANSISTOR	
Q7	2SC4081(QRS)	TRANSISTOR	
Q8	2SA1576(QR)	TRANSISTOR	
Q9	2SC4081(QRS)	TRANSISTOR	
Q10	2SC4081(QRS)	TRANSISTOR	
Q13	2SA1576(QR)	TRANSISTOR	
Q14	2SC4081(QRS)	TRANSISTOR	
Q15	2SA1576(QR)	TRANSISTOR	
Q16	DTC144EU	TRANSISTOR	
Q17	2SC4081(QRS)	TRANSISTOR	
Q18	2SC4081(QRS)	TRANSISTOR	
Q19	2SA1577(QR)	TRANSISTOR	
Q20	DTC124EU	TRANSISTOR	
Q21	2SA1577(QR)	TRANSISTOR	
Q23	2SC4081(QRS)	TRANSISTOR	
Q24	2SC4081(QRS)	TRANSISTOR	
Q25	DTC114EU	TRANSISTOR	
Q29	2SA1267(YG)JK	TRANSISTOR	
	or 2SA933S(RS)	TRANSISTOR	
Q30	DTA124EU	TRANSISTOR	
Q31	DTC144WU	TRANSISTOR	
D1	DAN202U	DIODE	
D2	DAN202U	DIODE	
D3	DAN202U	DIODE	
D4	DAN202U	DIODE	
D5	DAN202U	DIODE	
D6	DAN202U	DIODE	
R1	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R2	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R3	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R4	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R5	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R6	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R7	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R9	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R10	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R11	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R12	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
R17	NRVA62D-154N	RESISTOR	150KΩ,1/16W
R18	QRSA08F-1103YN	RESISTOR	110KΩ,1/10W
R19	QRSA08F-1433YN	RESISTOR	143KΩ,1/10W
R20	QRSA08F-1783YN	RESISTOR	178KΩ,1/10W
R21	NRVA62D-154N	RESISTOR	150KΩ,1/16W
R22	NRVA62D-124N	RESISTOR	120KΩ,1/16W
R24	NRVA02D-7872AY	RESISTOR	78.7KΩ,1/10W
R25	QRSA08J-623YN	RESISTOR	62KΩ,1/10W
R26	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R27	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R29	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R30	QRSA08J-153YN	RESISTOR	15KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R31	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R32	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R33	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R34	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R35	QVPA603-222	V RESISTOR,S-SP VIDEO EQ	2.2KΩ,16W
R36	QVPA603-152	V RESISTOR,S-LP VIDEO EQ	1.5KΩ,16W
R39	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R40	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R41	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R42	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R43	QRSA08J-362YN	RESISTOR	3.6KΩ,1/10W
R44	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R45	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R46	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R47	QRSA08J-151YN	RESISTOR	150Ω,1/10W
R48	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R49	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R50	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R51	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R52	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R53	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R57	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R58	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R59	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R60	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R61	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R62	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R63	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R64	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R65	QVPA603-682	V RESISTOR,N-SP VIDEO EQ	6.8KΩ,16W
R66	QVPA603-332	V RESISTOR,N-LP VIDEO EQ	3.3KΩ,16W
R69	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R70	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R71	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R72	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R73	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R74	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R75	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R76	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R77	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R80	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R81	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R82	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R83	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R84	QRSA08J-390YN	RESISTOR	39Ω,1/10W
R85	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R86	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R87	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R90	QVPA603-332	V RESISTOR,LP REC COL	3.3KΩ,16W
R91	QVPA603-332	V RESISTOR,SP REC COL	3.3KΩ,16W
R92	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R93	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R94	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R95	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R96	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R97	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R98	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R107	QRD161J-102	RESISTOR	1KΩ,1/6W
R109	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
C1	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C2	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C3	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C4	QCSA1HJ-121	CAPACITOR	120pF,50V
C5	QCSA1HJ-331	CAPACITOR	330pF,50V
C6	QCSA1HJ-121	CAPACITOR	120pF,50V
C7	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C8	QCSA1HJ-560	CAPACITOR	56pF,50V
C9	QCSA1HJ-271	CAPACITOR	270pF,50V
C10	QCSA1HJ-151	CAPACITOR	150pF,50V
C11	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C12	QER40JM-476	E CAPACITOR	47μF,6.3V
C13	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C14	QER41HM-104	E CAPACITOR	0.1μF,50V
C15	QFN41HJ-223	M CAPACITOR	0.022μF,50V
C16	QFN31HJ-223	M CAPACITOR	0.022μF,50V
C17	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C18	QCSA1HJ-820	CAPACITOR	82pF,50V
C19	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C20	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C21	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C22	QFN41HJ-223	M CAPACITOR	0.022μF,50V
C23	QFN41HJ-223	M CAPACITOR	0.022μF,50V
C24	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C26	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C27	QEK41CM-107	E CAPACITOR	100μF,16V
C28	QETA0JM-476	E CAPACITOR	47μF,6.3V
C29	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C30	QCSA1HJ-680	CAPACITOR	68pF,50V
C31	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C32	QCSA1HJ-180	CAPACITOR	18pF,50V
C33	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C34	QCSA1HJ-390	CAPACITOR	39pF,50V
C38	QCSA1HJ-120	CAPACITOR	12pF,50V
C39	QCSA1HJ-120	CAPACITOR	12pF,50V
C40	QCSA1HJ-390	CAPACITOR	39pF,50V
C42	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C43	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C44	QCSA1HJ-560	CAPACITOR	56pF,50V
C45	QCSA1HJ-560	CAPACITOR	56pF,50V
C48	QCSA1HJ-150	CAPACITOR	15pF,50V
C49	QCSA1HJ-120	CAPACITOR	12pF,50V
C50	QCSA1HJ-6R0	CAPACITOR	6pF,50V
C51	QCSA1HJ-510	CAPACITOR	51pF,50V
C52	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C54	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C55	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C57	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C58	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C61	QCFA1HZ-103	CAPACITOR	0.01μF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C62	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C63	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C64	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C65	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C66	QCSA1HJ-130	CAPACITOR	13pF,50V
C67	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C69	QEP41HM-105	NP E CAPACITOR	1μF,50V
C75	QCBB1HJ-101	CAPACITOR	100pF,50V
L1	PU59988-181J	COIL	180μH
L2	PU59988-330J	COIL	33μH
L3	PU59988-820J	COIL	82μH
L4	PU59988-101J	COIL	100μH
L5	PU59988-330J	COIL	33μH
L6	PU48530-101K	COIL	100μH
L7	PU59988-5R6J	COIL	5.6μH
L8	PU48530-101K	COIL	100μH
L9	PU59988-560J	COIL	56μH
L10	PU59988-150J	COIL	15μH
L11	PU59988-390J	COIL	39μH
L12	PU59988-221J	COIL	220μH
L13	PU59988-100J	COIL	10μH
L14	PU59988-220JY	COIL	22μH
L15	PU59988-270J	COIL	27μH
L16	PU59988-820J	COIL	82μH
L17	PU59988-180J	COIL	18μH
L18	PU59988-180J	COIL	18μH
L19	PU48530-101K	COIL	100μH
L20	PU59988-680J	COIL	68μH
L22	PU59988-181J	COIL	180μH
L23	PU59988-181J	COIL	180μH
TP	PU60142-2	TEST PIN	
CN1	PU56258-18	CONNECTOR	
CN2	PU58844-3R	CONNECTOR	
CN3	PU58844-3	CONNECTOR	
CN4	PU60417-4	CONNECTOR	
CN5	PU58844-8Y	CONNECTOR	
CN6	PU60417-3	CONNECTOR	

- FMA PRE/REC SECTION -

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
IC201	AN3380NK	IC	
Q201	DTC124TU	CHIP D.TR.	
Q202	DTC124TU	CHIP D.TR.	
Q203	DTC114EU	TRANSISTOR	
Q204	2SC4081(QRS)	TRANSISTOR	
Q205	DTA114EU	TRANSISTOR	
Q206	DTC114EU	TRANSISTOR	
D203	1SS133	DIODE	
D204	1SS133	DIODE	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R201	NRVA62D-273N	RESISTOR	27KΩ,1/16W
R202	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R203	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R204	QRSA08J-274YN	RESISTOR	270KΩ,1/10W
R205	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R206	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R207	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R208	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R210	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R211	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R212	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R213	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R214	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R215	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R216	QVZ3521-331Z	V RESISTOR,AUDIO REC FM LEVEL	330Ω
R217	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
C201	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C202	QCSA1HJ-391	CAPACITOR	390pF,50V
C203	QCSA1HJ-561	CAPACITOR	560pF,50V
C204	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C205	QCSA1HJ-561	CAPACITOR	560pF,50V
C206	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C207	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C208	QCSA1HJ-391	CAPACITOR	390pF,50V
C209	QEK60JM-107	E CAPACITOR	100μF,6.3V
C210	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C211	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C214	QCSA1HJ-330	CAPACITOR	33pF,50V
C215	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C216	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C217	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C218	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C219	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C220	QEK61EM-476	E CAPACITOR	47μF,25V
C221	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C224	QCFA1CZ-224	CAPACITOR	0.22μF,16V
L201	PU48530-101K	COIL	100μH
BPF201	PELN0374	BAND PASS FILTER	
TP53	PU60142-2	TEST PIN,X2(TP53,TP54)	
CN201	PU58844-8	CONNECTOR	

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FLYING ERASE BOARD ASSEMBLY <46>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	PB30104B	FLYING ERASE BOARD ASSY	
	Q1	2SA933S	TRANSISTOR	
	Q2	2SC1741S(QR)	TRANSISTOR	
	Q3	2SA933S(Q)	TRANSISTOR	
	Q4	2SD639R	TRANSISTOR	
	Q5	2SD639R	TRANSISTOR	
	D1	UZ8.2BSC	ZENER DIODE	
	D2	1SS133	DIODE	
		or MA165	DIODE	
	R1	QRD161J-473	RESISTOR	47KΩ,1/6W
	R2	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R3	QRD161J-222	RESISTOR	2.2KΩ,1/6W
	R4	QRD161J-473	RESISTOR	47KΩ,1/6W
	R5	QRD161J-223	RESISTOR	22KΩ,1/6W
	R6	QRD161J-104	RESISTOR	100KΩ,1/6W
	R7	QRD161J-121	RESISTOR	120Ω,1/6W
	R8	QRD161J-104	RESISTOR	100KΩ,1/6W
	R9	QRD161J-121	RESISTOR	120Ω,1/6W
	R10	QRD161J-101	RESISTOR	100Ω,1/6W
	C1	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C2	QCC11EJ-123	CAPACITOR	0.012μF,25V
	C3	QCSB1HJ-560	CAPACITOR	56pF,50V
	C4	QCBB1HJ-820	CAPACITOR	82pF,50V
	C6	QCBB1HJ-820	CAPACITOR	82pF,50V
	C8	QCT25UJ-181	CAPACITOR	180pF
	C9	QCT25UJ-330	CAPACITOR	33pF
	L1	PU48530-560J	COIL	56μH
	L2	PU48530-3R3K	COIL	3.3μH
	L3	PU48530-3R3K	COIL	3.3μH
	L4	PU59152-101J	COIL	100μH
⚠	T1	PU56175	SWITCH TRANS	
	SLD1	PU61041	SHIELD CASE	
	SLD2	PU61042	SHIELD COVER	
	SLD3	PU61043	SHIELD PLATE	
	CN1	PU58844-3	CONNECTOR	
	CN2	PU58844-104	CONNECTOR	

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DECK TERMINAL BOARD ASSEMBLY <51>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	PB10481A-01	DECK TERMINAL BOARD ASSEMBLY	
	Q1	PU60625	END SENSOR	
	R3	QRD161J-331	RESISTOR	330Ω,1/6W
	R4	QRD161J-331	RESISTOR	330Ω,1/6W
	R5	QRD161J-331	RESISTOR	330Ω,1/6W
	R8	NTH5D473KB	THERMISTOR	
		or ERT-D2ZHK473S	NEGA THERMISTOR	
		or NTH5D473KA	RESISTOR	
	C1	QCVB1CM-103	CAPACITOR	0.01μF,16V
	PS1	PS5705HR	PH INTERRUPTER	
	PS2	PS5705HR	PH INTERRUPTER	
⚠	TH601	PESC1041	POSITIVE THERMISTOR	
	CN1	PEMC0722-018	WIRE TRAP	
		or PEMC0753-018	WIRE TRAP	
	CN2	PU60642	7PIN CONNECTOR	
	CN3	PU60640	4PIN CONNECTOR	

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LOADING MDA BOARD ASSEMBLY <55>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA2	PB30150A	LOADING MDA BOARD ASSY	
⚠	IC1	BA6418N	IC	
	C1	QETA1CM-227	E CAPACITOR	220μF,16V
	C3	QETA1HM-105	E CAPACITOR	1μF,50V
	CN1	PU59555-104	CAP HOUSING	
	CN2	PU58844-2	CAP HOUSING	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

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CASSETTE HOUSING BOARD <56>

	PWB1	PB40061	CASSETTE HOUSING BOARD	
	Q2	PN268VI	PHOTO TRANSISTOR	
	D1	UZ5.1BSB	ZENER DIODE	
		or RD5.1ESB2	ZENER DIODE	
	R1	QRD162J-473	RESISTOR	47KΩ,1/6W
	R2	QRD182J-681	RESISTOR	680Ω,1/8W
	R3	QRD122J-102S	RESISTOR	1KΩ,1/2W
	C1	QCC11EJ-103	CAPACITOR	0.01μF,25V
	PHS3	PU60629	CASSETTE SENSOR	
	TH1	ERT-D2FHJ503S	THERMISTOR	
		or PESC1084	NEGA THERMISTOR	
		or ERT-D2FHK503S	THERMISTOR	
	CN2	PU60639	4PIN SOCKET	
		or PEMC0971	4PIN SOCKET	

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PRIMARY BOARD ASSEMBLY <60>

	PWBA	PB20555F	PRIMARY BOARD ASSY	
	J4	PU60894-102	TERMINAL	
	J5	PU60894-102	TERMINAL	
	J6	PU60894-102	TERMINAL	
⚠	F1	QMF51E2-1R25	FUSE	T1.2A
⚠		or QMF51E2-1R25J1	FUSE	T1.2A

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UPPER DRUM 1 BOARD <62>

	PWB1	PDM3161	BOARD (UPPER DRUM),X2 <62><63>	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

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SOUND MENU BOARD ASSEMBLY <71>

	PWBA2	PB10703A2-02	SOUND MENU BOARD ASSY	
	IC101	XRA15218	IC	
		or BA15218	IC	
	IC102	XRA15218	IC	
		or BA15218	IC	
	IC103	TDA3810	IC	
	Q101	DTA144ES	TRANSISTOR	
	Q102	DTA144ES	TRANSISTOR	
	Q103	2SC1740S	TRANSISTOR	
		or 2SC3199-TJK	TRANSISTOR	
	Q104	2SC1740S	TRANSISTOR	
		or 2SC3199-TJK	TRANSISTOR	
	Q105	2SC1740S	TRANSISTOR	
		or 2SC3199-TJK	TRANSISTOR	
	Q106	2SC1740S	TRANSISTOR	
		or 2SC3199-TJK	TRANSISTOR	
	D101	1SS133	DIODE	
		or MA165	DIODE	
	D102	1SS133	DIODE	
		or MA165	DIODE	
	R101	QRD161J-473	RESISTOR	47KΩ,1/6W
	R102	QRD161J-473	RESISTOR	47KΩ,1/6W
	R103	QRD161J-334	RESISTOR	330KΩ,1/6W
	R104	QRD161J-334	RESISTOR	330KΩ,1/6W
	R105	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R106	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R107	QRD161J-562	RESISTOR	5.6KΩ,1/6W
	R108	QRD161J-562	RESISTOR	5.6KΩ,1/6W
	R109	QRD161J-103	RESISTOR	10KΩ,1/6W
	R110	QRD161J-103	RESISTOR	10KΩ,1/6W
	R111	QRD161J-103	RESISTOR	10KΩ,1/6W
	R112	QRD161J-103	RESISTOR	10KΩ,1/6W
	R113	QRD161J-122	RESISTOR	1.2KΩ,1/6W
	R114	QRD161J-122	RESISTOR	1.2KΩ,1/6W
	R115	QRD161J-331	RESISTOR	330Ω,1/6W
	R116	QRD161J-331	RESISTOR	330Ω,1/6W
	R117	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R118	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R119	QRD161J-473	RESISTOR	47KΩ,1/6W
	R120	QRD161J-473	RESISTOR	47KΩ,1/6W
	R121	QRD161J-331	RESISTOR	330Ω,1/6W
	R122	QRD161J-331	RESISTOR	330Ω,1/6W
	R123	QRD161J-122	RESISTOR	1.2KΩ,1/6W
	R124	QRD161J-122	RESISTOR	1.2KΩ,1/6W
	R125	QRD161J-472	RESISTOR	4.7KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R126	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R127	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R128	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R129	QRD161J-103	RESISTOR	10KΩ,1/6W
R130	QRD161J-183	RESISTOR	18KΩ,1/6W
R131	QRD161J-183	RESISTOR	18KΩ,1/6W
R132	QRD161J-103	RESISTOR	10KΩ,1/6W
R133	QRD161J-163	RESISTOR	16KΩ,1/6W
R134	QRD161J-103	RESISTOR	10KΩ,1/6W
R135	QRD161J-823	RESISTOR	82KΩ,1/6W
R136	QRD161J-183	RESISTOR	18KΩ,1/6W
R137	QRD161J-203	RESISTOR	20KΩ,1/6W
R138	QRD161J-163	RESISTOR	16KΩ,1/6W
R139	QRD161J-223	RESISTOR	22KΩ,1/6W
R140	QRD161J-223	RESISTOR	22KΩ,1/6W
R141	QRD161J-113	RESISTOR	11KΩ,1/6W
C101	QFLC1HJ-682Z	M CAPACITOR	0.0068μF,50V
C102	QFLC1HJ-682Z	M CAPACITOR	0.0068μF,50V
C103	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C104	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C105	QETC1AM-476	E CAPACITOR	47μF,10V
C106	QETC1AM-476	E CAPACITOR	47μF,10V
C107	QETC1CM-106	E CAPACITOR	10μF,16V
C108	QETC1CM-106	E CAPACITOR	10μF,16V
C109	QETC1HM-225	E CAPACITOR	2.2μF,50V
C110	QETC1HM-225	E CAPACITOR	2.2μF,50V
C111	QETC1AM-107	E CAPACITOR	100μF,10V
C112	QETC1AM-107	E CAPACITOR	100μF,10V
C113	QENC1HM-225	NP E CAPACITOR	2.2μF,50V
C114	QENC1HM-225	NP E CAPACITOR	2.2μF,50V
C115	QETC1AM-107	E CAPACITOR	100μF,10V
C116	QCXB1CM-182	CAPACITOR	0.0018μF,16V
C117	QETC1CM-476	E CAPACITOR	47μF,16V
C118	QETC1AM-476	E CAPACITOR	47μF,10V
C119	QETC1AM-476	E CAPACITOR	47μF,10V
C120	QETC1CM-476	E CAPACITOR	47μF,16V
C121	QCVB1CN-103	CAPACITOR	0.01μF,16V
C122	QFV71HJ-153	TF CAPACITOR	0.015μF,50V
C123	QFV71HJ-153	TF CAPACITOR	0.015μF,50V
C124	QFV71HJ-223	TF CAPACITOR	0.022μF,50V
C125	QFV71HJ-333	TF CAPACITOR	0.033μF,50V
C126	QCXB1CM-182	CAPACITOR	0.0018μF,16V
CN101	PEMC0713-109	HOUSING	

SECTION 6
TECHNICAL INFORMATIONS

6.1 CPU PIN FUNCTIONS

1. *MECHACON CPU pin function (IC601)*

PIN NO.	LABEL	IN/OUT	N O T E
1	Vcc	IN	UNSW 5V
2	V REF	IN	UNSW 5V
3	LOADING M1	OUT	FWD L REV H BRAKE H STOP L
4	LOADING M2	OUT	H L H L
5	WA IN	IN	SIGNAL DETECT (WIDE ASPECT MODE:M(5V))
6	AVG FM	IN	AUTO TRAKING DATA INPUT
7	THERM	IN	THERMIC CORRECTION(CAPSTAN BRAKE TIMING CONTROL)
8	MODE SW B	IN	MECHANISM MODE DETECT
9	MODE SW A	IN	
10	MODE SW C	IN	
11	REC SAFETY SW	IN	REC SAFETY SW DETECT (ON:L)
12	APT CTL	OUT	SHARPNESS CONTROL
13	DRUM CTL VOLTAGE	OUT	DRUM MOTOR CONTROL/CORRECTION
14	CAPSTAN CTL VOLTAGE	OUT	CAPSTAN MOTOR CONTROL/CORRECTION
15	CASSETTE SENSOR	IN	CASSETTE INPUT/OUTPUT DETECT (DET ON:L)
16	CTL PULSE	IN	MODE DETECT,BLANK TAPE DETECT
17	DRUM FF	IN	DRUM MOTOR SPEED DETECT AND TIMING CONTROL
18	END SENSOR	IN	TRAILER TAPE DETECT (DET ON:L)
19	REV	OUT	CAPSTAN MOTOR CONTROL (FWD:H , REV:L)
20	V.P CTL	OUT	SPECIAL PB:ON(PALSE OUTPUT TIMING CONTROL)
21	HEAD SELECT	OUT	SP:L , LP:H
22	BEST SEARCH	OUT	BEST SEARCH:H , NORMAL:L
23	S-VHS CASSETTE SW	IN	S-VHS TAPE IN:L , VHS TAPE IN:H
24	SP FG	IN	SUPPLY REEL ROTATION DETECT,TAPE REMAINING DATA
25	TU FG	IN	TAKE-UP REEL ROTATION DETECT,TAPE REMAINING DATA
26	CAPSTAN FG	IN	MODE DETECT,TAPE REMAINING DATA
27	CN Vss	–	GND
28	RESET	IN	RESET AT CONNECT VCR TO AC
29	X IN	IN	MAIN SYSTEM CLOCK (4MHz)
30	X OUT	OUT	
31	φ	–	NC
32	Vss	–	GND
33	AUDIO SERIAL CLOCK	OUT	AUDIO SERIAL DATA TRANSFER CLOCK
34	AUDIO SERIAL DATA	OUT	AUDIO CONTROL SERIAL DATA
35	HiFi REC START	OUT	HiFi REC START:L
36	AUDIO MUTE	OUT	AUDIO MUTE:H
37	S DATA	OUT	16BIT SERIAL DATA OUTPUT FOR SERVO IC CONTROL
38	DEM MUTE	OUT	AUDIO(DEMOD CIRCUIT) MUTE CONTROL(MUTE ON:H)
39	FM DET S	OUT	PB FM DETECT(VHS:L/SVHS:H)
40	C.P DATA	OUT	CHANNEL PULSE CONTROL DATA
41	POWER CONTROL	OUT	POWER ON:L , OFF:H
42	F.E HEAD CTL	OUT	FLYING ERASE HEAD CONTROL(ON:L)
43	A ERASE HEAD CTL	OUT	AUDIO ERASE HEAD ON:L
44	REC START	OUT	REC START:L
45	D.O CTL	IN	FM AUDIO DETECT
46	TEXT	OUT	TELETEXT MODE:L
47	S ID IN	IN	INPUT SIGNAL DETECT
48	INDEX	IN/OUT	INDEX DATA (VISS) WRITE CONTROL AND DETECT ON:L
49	MEMORY DATA	IN/OUT	MEMORY DATA (SLOW TR DATA ,CH SKIP)
50	MEMORY CE	IN	MEMORY IC CHIP ENABLE
51	SERIAL CLOCK	IN	SERIAL DATA TRANSFER CLOCK
52	LOCK DET	IN	TUNING CONDITION DETECT
53	SYNC DET	IN	SYNC DETECT , BLUEBACK CONTROL
54	PLL DATA	OUT	TUNING DATA
55	TUNER CONTROL	OUT	TUNER MODE ON:H
56	EDIT CTL	OUT	EDIT CONTROL(R.A FUNCTION)
57	START SENSOR	IN	LEADER TAPE DETECT (DET ON:L)
58	TRICK	OUT	SPECIAL PB:L
59	SECAM DET	NC	NC
60	PAUSE	OUT	CAPSTAN MOTOR CONTROL (PAUSE:L/NORMAL:H)
61	SERVO	OUT	CAPSTAN MOTOR CONTROL (SERVO:H/MECHACON:L)
62	TIMER SERIAL CLOCK	OUT	TIMER/MECHACON SERIAL DATA TRANSFER CLOCK
63	TIMER DATA	IN/OUT	TIMER/MECHACON SERIAL DATA
64	REMOTE PAUSE	OUT	REMOTE PAUSE CONTROL(PAUSE ON:L)

Table 6-1 MECHACON CPU pin function

2. IC1 CPU PIN FUNCTION (TIMER/DISPLAY)

PIN NO.	LABEL	IN/OUT	NOTE
1	Sd	OUT	KEY SCAN PULSE OUTPUT
2	Sc	OUT	
3	Sb	OUT	
4	Sa	OUT	
5	POWER DOWN	IN	POWER DOWN DETECT(POWER DOWN:L)
6	DISP/OS CLOCK	OUT	DISPLAY/ON SCREEN DATA TRANSFER CLOCK
7	DISP/OS DATA	OUT	DISPLAY/ON SCREEN SERIAL DATA
8	TEST	IN	TEST POINT(CLOCK ADJUST/FDP CHECK)
9	REMOTE	IN	16BIT REMOTE DATA INPUT(A/B CODE)
10	NC	–	NC
11	CNT PLS	IN	LINEAR TIME COUNTER DATA
12	CNT PLS	IN	
13	KS 0	IN	KEY SCAN DATA INPUT
14	KS 1	IN	
15	KS 2	IN	
16	KS 3	IN	
17	M/C DATA	IN/OUT	MECHACON/TIMER SERIAL DATA
18	M/C CLOCK	OUT	MECHACON/TIMER DATA TRANSFER CLOCK
19	SDA	IN/OUT	VIDEO PROGRAM SYSTEM SERIAL DATA
20	SCL	OUT	VIDEO PROGRAM SYSTEM DATA TRANSFER CLOCK
21	OS CS	OUT	ON SCREEN IC CHIP SELECT:L
22	OS RESET	OUT	ON SCREEN IC RESET:L
23	DISP CE	OUT	DISPLAY IC CHIP ENABLE:L
24	AUDIO INT	IN	AUDIO CONTROL IC CHIP SELECT:L
25	REAR	IN	INPUT SIGNAL DETECT
26	SC	OUT	SIMULCAST MODE:H
27	AUDIO CLK	OUT	AUDIO CONTROL SERIAL DATA TRANSFER CLOCK
28	PROG	IN	PROGRAM BLUEBACK MODE:H
29	NC	–	
30	X1	IN	MAIN SYSTEM CLOCK(4.19MHz)
31	X2	OUT	
32	Vss	–	GND
33	XT1	IN	GND
34	NC	–	NC
35	JS/B	IN	JOG DIAL PULSE INPUT
36	SHUTTLE	IN	SHUTTLE SWITCH PULSE INPUT
37	JS/A	IN	JOG DIAL PULSE INPUT
38	AUD DATA	OUT	AUDIO CONTROL SERIAL DATA
39	RESET	IN	RESET AT CONNECT VCR TO AC
40	NC	–	NC
41	NC	–	
42	NC	–	
43	NC	–	
44	NC	–	
45	NC	–	
46	NC	–	
47	NC	–	
48	NC	–	
49	NC	–	
50	Sp	–	NOT USED
51	So	OUT	KEY SCAN PULSE OUTPUT
52	Sn	OUT	
53	Sm	OUT	
54	Sl	–	NOT USED
55	Sk	–	
56	V LOAD	IN	GND
57	V PRE	IN	
58	Sj	–	NOT USED
59	Si	OUT	KEY SCAN PULSE OUTPUT
60	Sh	OUT	
61	Sg	OUT	
62	Sf	OUT	
63	Se	–	NOT USED
64	VDD	IN	UNSW5V

Table 6-2 TIMER CPU pin function

E. & O.E. No.82334